GSA Data Repository Item 2017344
Giallorenzo, M.A., Wells, M.L., Yonkee, W.A., Stockli, D.F., and Wernicke, B.P., 2017, Timing of exhumation, Wheeler Pass thrust sheet, southern Nevada and California: Late Jurassic to middle Cretaceous evolution of the southern Sevier fold-and-thrust belt: GSA Bulletin, https://doi.org/10.1130/B31777.1.

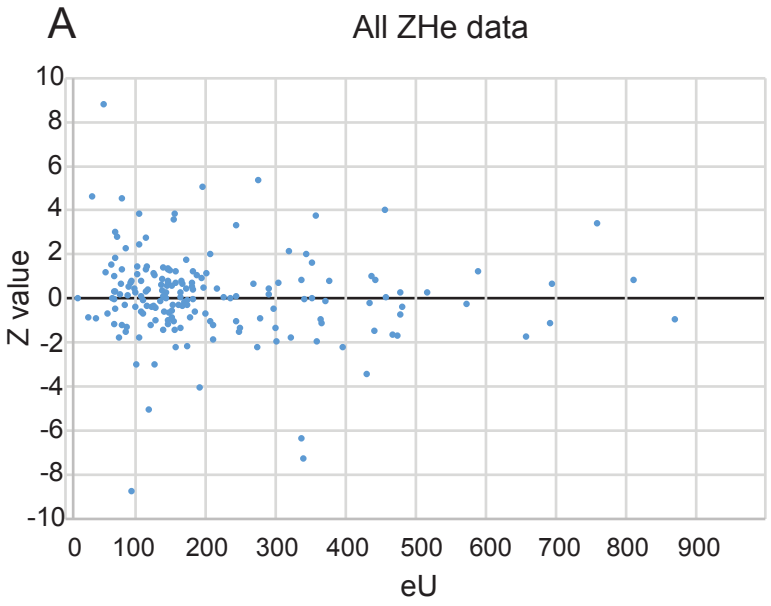
DATA REPOSITORY

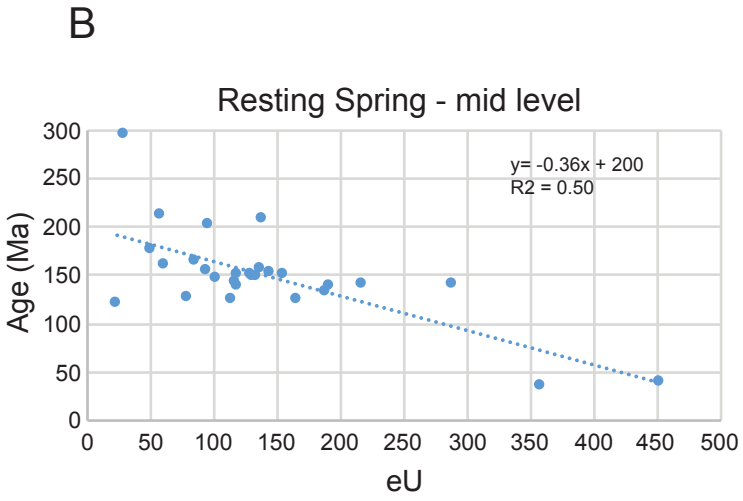
Figure DR1. A. Plot of effective Uranium content (eU) versus Z value (grain age minus sample mean age, divided by standard deviation). B through F, plots of eU versus grain age for different structural levels of the thrust sheet within the Resting Spring Range (B), Spring Mountains (E and D), and Nopah Range (E and F).

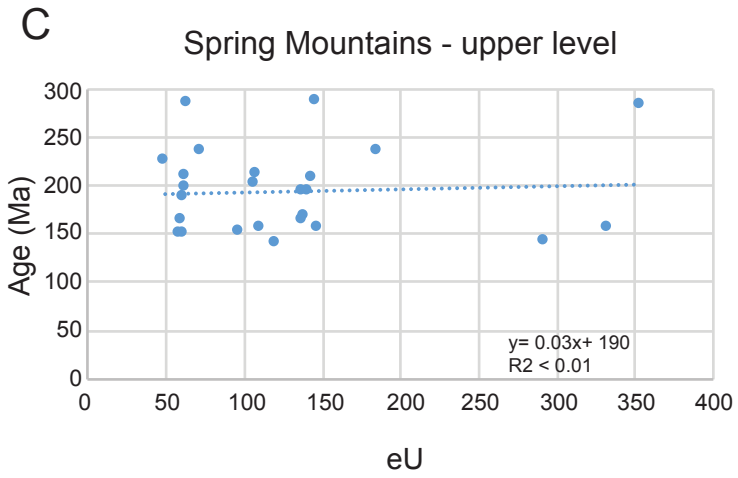
Figure DR2. Probability Distribution Functions for the aliquot zircon (U-Th)/He ages from the three study localities of the Wheeler Pass thrust sheet: SM, Spring Mountains; RSR, Resting Spring Range; NR, Nopah Range.

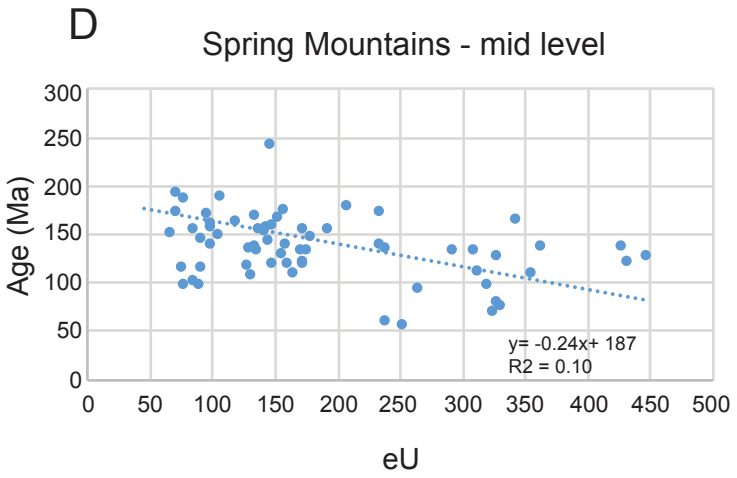
Table DR1. Zircon (U-Th)/He aliquot data for samples from Spring Mountains, Resting Spring Range, and Nopah Range. Summary U-Pb data included for grains analyzed for ZHe thermochronology.

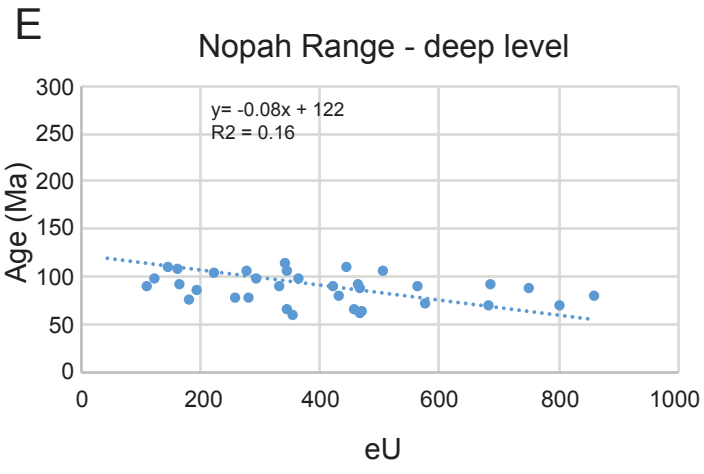
Table DR2. U-Pb data used in the pre-screening process to select most similar eU grain population for paleodepth transects.

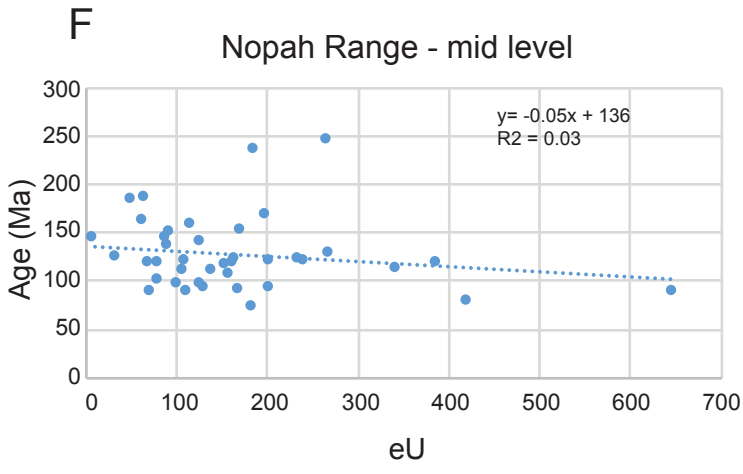

A
All ZHe data
Z value
eU


B
Resting Spring - mid level
y= -0.36x + 200
R2 = 0.50
Age (Ma)
eU


C
Spring Mountains - upper level
y= 0.03x+ 190
R2 < 0.01
Age (Ma)
eU


D
Spring Mountains - mid level
y= -0.24x+ 187
R2 = 0.10
Age (Ma)
eU


E
Nopah Range - deep level
y= -0.08x + 122
R2 = 0.16
Age (Ma)
eU


F
Nopah Range - mid level
y= -0.05x + 136
R2 = 0.03
Age (Ma)
eU

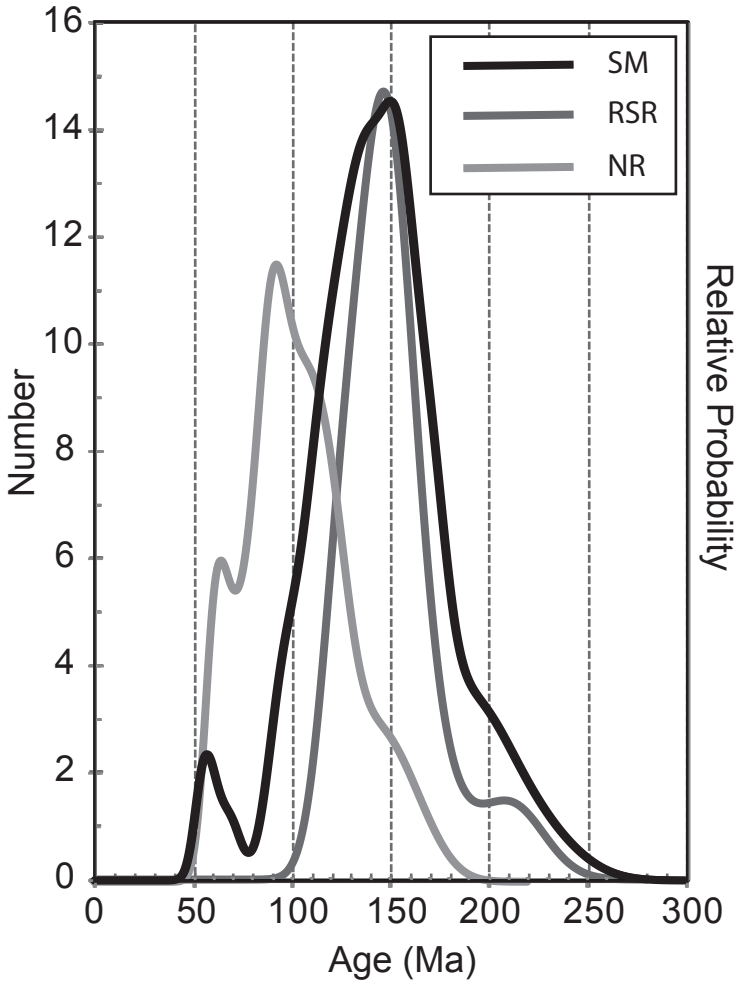

16
14
12
10
8
6
4
2
0
Number
Relative Probability
SM
RSR
NR
0
50
100
150
200
250
300
Age (Ma)

Table DR1: Zircon (U-Th)/He and U-Pb Aliquot Data

Sample	Rock Unit	Latitude (°N)	Longitude (°W)	Elevation (km)	Restored Depth(km)	Depth below Cbk (km)	Age (Ma)	± 4% (Ma)	U (ppm)	Th (ppm)	Sm (ppm)	[U]e	Th/U	He (nmol/g)	mass (mg)	Ft*	ESR	206/238 (Ma)	2σ (Ma)	206/207 (Ma)	2σ (Ma)
Northwestern Spring Mountains																					
West limb of Wheeler syncline																					
SM-4*	Zs	36.4093	-115.9500	1.83	10.6	2.6															
1							79.5	6.4	71.1	22.3	1.5	76.3	0.31	27.7	21.03	0.84	76.1				
2							116.3	9.3	39.1	11.9	1.4	41.9	0.30	22.2	17.56	0.84	73.0				
5							43.4	3.5	227.9	82.1	1.0	246.8	0.36	42.0	3.51	0.73	41.8				
6							118.6	9.5	145.9	74.4	1.4	163.0	0.51	83.3	9.15	0.79	56.8				
Mean Age (Ma) and Std Dev (Ma)							**ND**	**ND**													
SM-5*	Zs	36.4105	-115.9472	1.93	10.4	2.4															
1							48.0	3.8	188.5	181.5	26.7	230.4	0.96	44.8	4.17	0.75	47.0				
2							118.3	9.5	47.8	37.6	2.2	56.5	0.79	27.1	4.18	0.75	46.3				
3							77.8	6.2	225.5	465.1	9.5	332.7	2.06	109.4	7.92	0.77	54.0				
4							40.6	3.2	463.7	775.5	7.9	642.3	1.67	99.4	2.73	0.70	39.6				
5							22.5	1.8	364.1	277.9	5.1	428.1	0.76	38.2	4.26	0.73	43.7				
Mean Age (Ma) and Std Dev (Ma)							**ND**	**ND**													
SM-6*	Zs	36.4114	-115.9444	2.03	10.1	2.1															
1							68.7	5.5	280.8	189.4	11.9	324.4	0.67	89.1	4.10	0.74	44.4				
2							95.9	7.7	286.8	148.6	1.5	321.0	0.52	132.1	8.54	0.79	56.2				
3							95.5	7.6	75.6	61.7	2.0	89.8	0.82	34.2	4.05	0.73	44.1				
4							54.4	4.4	213.5	171.1	7.3	253.0	0.80	53.3	3.20	0.71	40.7				
5							59.2	4.7	194.1	198.6	4.2	239.9	1.02	56.5	3.77	0.73	44.1				
Mean Age (Ma) and Std Dev (Ma)							**74.7**	**19.8**													
SM-7	Zs	36.4113	-115.9380	2.13	9.7	1.7															
1							117.8	9.4	131.3	127.6	1.1	160.7	0.97	78.0	4.89	0.75	48.6				
2							119.0	9.5	153.7	83.0	1.1	172.8	0.54	85.5	5.24	0.76	49.8				
3							134.2	10.7	108.8	94.9	1.1	130.6	0.87	72.9	5.36	0.76	49.9				
4†							*79.1*	*6.3*	295.6	144.2	2.1	328.8	0.49	105.3	4.28	0.75	45.9				
5							107.0	8.6	102.6	123.4	1.2	131.0	1.20	56.5	3.96	0.74	45.7				
Mean Age (Ma) and Std Dev (Ma)							**119.5**	**11.2**													
SM-8	Zs	36.4117	-115.9351	2.18	9.4	1.4															
1							116.9	9.4	108.9	88.0	1.9	129.2	0.81	65.9	9.27	0.80	60.2				
2							131.2	10.5	284.2	114.4	1.9	310.5	0.40	172.9	6.57	0.78	53.1				
3							97.0	7.8	67.5	42.6	0.8	77.4	0.63	32.1	6.85	0.79	55.5				
4							92.7	7.4	210.0	242.5	2.9	265.9	1.15	96.9	3.46	0.72	42.6				
5							108.0	8.6	150.3	65.0	3.1	165.3	0.43	74.9	5.63	0.77	51.3				
Mean Age (Ma) and Std Dev (Ma)							**109.2**	**15.6**													
SM-8A	ZCw	36.3465	-115.9115	1.79	9.3	1.3															
1							119.3	9.5	414.6	78.5	1.5	432.7	0.19	218.5	6.74	0.78	52.2				
2							136.0	10.9	108.9	110.9	3.0	134.4	1.02	78.2	8.27	0.78	55.6				
3							145.3	11.6	147.2	139.3	9.0	179.3	0.95	107.5	5.64	0.75	48.5				
Mean Age (Ma) and Std Dev (Ma)							**133.5**	**13.2**													
RW-7	ZCw	36.3240	-115.9072	1.70	9.1	1.1															
1							159.2	12.7	91.8	34.6	1.0	99.8	0.38	63.8	4.44	0.74	43.6				
2							156.7	12.5	123.7	86.5	1.8	143.6	0.70	92.2	4.91	0.75	47.2				
3							133.5	10.7	205.2	149.4	3.0	239.6	0.73	133.1	5.14	0.76	50.0				
Mean Age (Ma) and Std Dev (Ma)							**149.8**	**14.2**													
RW-9	ZCw	36.4016	-115.9198	2.05	9.1	1.1															
1†							*186.0*	*14.9*	66.4	47.0	1.3	77.2	0.71	56.8	4.00	0.72	42.0				
2							132.0	10.6	257.0	157.5	6.2	293.3	0.61	153.4	3.19	0.73	42.6				
3							141.0	11.3	106.3	171.9	2.1	145.9	1.62	82.1	4.10	0.73	44.2				
Mean Age (Ma) and Std Dev (Ma)							**136.5**	**6.3**													
SM-9	ZCw	36.4130	-115.9307	2.26	9.0	1.0															
1							114.7	9.2	76.9	64.4	1.7	91.7	0.84	48.6	22.31	0.85	79.6				
2							157.6	12.6	129.5	84.4	3.5	149.0	0.65	105.8	13.89	0.82	68.7				
3							138.4	11.1	135.9	99.1	2.0	158.7	0.73	99.2	14.91	0.83	69.9				
4							128.4	10.3	143.0	56.2	1.1	156.0	0.39	85.1	6.82	0.78	53.2				
5							144.9	11.6	76.5	65.8	2.0	91.6	0.86	52.4	3.72	0.72	42.3				
Mean Age (Ma) and Std Dev (Ma)							**136.8**	**16.3**													
SM-4A	ZCw	36.3774	-115.9135	1.94	8.9	0.9															
1							153.7	12.3	72.7	54.0	1.2	85.1	0.74	56.3	8.46	0.79	56.3				
2							131.7	10.5	121.1	69.1	1.6	137.0	0.57	76.7	6.74	0.78	53.7				
3							147.4	11.8	88.1	77.9	1.3	106.0	0.88	63.1	4.49	0.74	45.4				
Mean Age (Ma) and Std Dev (Ma)							**144.3**	**11.3**													

SM-10	Cz	36.4134	-115.9258	2.33	8.5	0.5															
1†							*74.2*	*5.9*	288.7	182.4	8.1	330.8	0.63	103.5	7.29	0.78	53.0				
2							120.9	9.7	158.2	65.5	1.5	173.3	0.41	93.1	11.33	0.82	64.5				
3							109.1	8.7	304.5	220.0	2.6	355.2	0.72	162.5	5.57	0.77	51.7				
4							125.8	10.1	299.8	123.1	1.1	328.1	0.41	169.3	4.70	0.75	47.2				
5							114.6	9.2	68.1	35.2	1.4	76.2	0.52	35.8	4.91	0.75	47.6				
Mean Age (Ma) and Std Dev (Ma)							**117.6**	**7.3**													
SM-23	Oe	36.4691	-115.9181	1.74	6.3	-1.7															
2†							*236.3*	*18.9*	61.1	47.0	0.7	71.9	0.77	74.2	9.39	0.79	58.3	1798.0	13.0	1856.7	8.4
4							139.7	11.2	105.9	59.9	1.0	119.7	0.57	72.3	8.21	0.79	57.3	1773.0	15.0	1844.0	8.5
7							150.4	12.0	49.7	50.5	1.4	61.4	1.02	40.4	11.25	0.80	60.7	1797.0	13.0	1838.9	7.5
13							151.3	12.1	49.2	38.7	0.5	58.1	0.78	40.1	15.70	0.83	73.4	1842.0	16.0	1897.4	9.6
16							164.1	13.1	48.8	49.5	1.1	60.2	1.01	42.0	6.74	0.78	54.1	1798.0	15.0	1861.0	11.0
Mean Age (Ma) and Std Dev (Ma)							**151.4**	**10.0**													
SM-24	Dn	36.4647	-115.8976	2.05	5.9	-2.1															
1							157.0	12.6	303.9	124.0	12.0	332.5	0.41	228.1	9.33	0.80	59.3	1066.5	7.4	1084.2	9.6
3†							*202.2*	*16.2*	91.2	66.6	2.4	106.5	0.73	97.4	13.84	0.82	68.7	1622.0	11.0	1688.4	8.3
7							167.5	13.4	122.6	67.1	1.6	138.0	0.55	98.3	6.38	0.78	53.1	1400.0	13.0	1431.0	10.0
9							164.9	13.2	120.9	69.6	3.7	137.0	0.58	97.0	7.77	0.79	55.5	1052.2	9.6	1110.0	13.0
11							142.5	11.4	262.3	126.2	9.5	291.4	0.48	177.6	6.60	0.78	54.7	1325.0	11.0	1377.8	9.7
Mean Age (Ma) and Std Dev (Ma)							**158.0**	**11.2**													
East limb of Wheeler syncline																					
SM-13	ZCw	36.3432	-115.8121	2.00	7.7	0.7															
1							161.3	12.9	89.7	131.7	2.4	120.0	1.47	74.4	2.65	0.70	39.7				
2							186.7	14.9	88.9	76.5	1.6	106.5	0.86	87.4	9.64	0.80	60.8				
3							167.2	13.4	97.4	164.6	2.4	135.3	1.69	92.8	5.33	0.75	47.8				
4							154.6	12.4	118.0	87.3	3.4	138.1	0.74	83.1	2.88	0.71	40.6				
5†							*241.0*	*19.3*	126.3	89.5	6.1	146.9	0.71	146.5	4.45	0.75	47.8				
Mean Age (Ma) and Std Dev (Ma)							**167.5**	**13.8**													
SM-12	ZCw	36.3170	-115.8332	1.89	7.6	0.6															
1							155.5	6.2	70.2	125.0	42.4	99.2	1.78	62.3	4.06	0.74	45.6				
2							162.9	6.5	293.4	215.3	9.7	343.0	0.73	208.4	2.37	0.68	36.3				
3							172.2	6.9	57.1	60.7	1.2	71.1	1.06	50.2	5.37	0.75	47.6				
4							173.6	6.9	125.8	137.0	5.8	157.4	1.09	107.9	3.08	0.72	42.4				
5							152.2	6.1	104.4	165.7	5.1	142.6	1.59	89.2	5.32	0.75	48.4				
Mean Age (Ma) and Std Dev (Ma)							**163.3**	**9.6**													
SM-14	Oe	36.3587	-115.8512	2.17	5.7	-1.6															
1†							*100.6*	*8.0*	67.5	80.3	1.5	86.0	1.19	36.9	6.93	0.78	55.8				
2							166.7	13.3	134.2	81.5	5.6	153.0	0.61	103.4	4.67	0.74	45.4				
3							190.9	15.3	61.8	46.3	1.7	72.5	0.75	58.3	5.30	0.77	51.6				
4							149.6	12.0	58.3	42.0	1.2	68.0	0.72	43.6	6.78	0.79	55.7				
5							176.9	14.2	187.2	91.3	2.4	208.3	0.49	152.1	4.42	0.76	47.8				
Mean Age (Ma) and Std Dev (Ma)							**171.0**	**17.4**													
SM-15	Zs	36.3926	-115.8008	2.40	9.1	1.8															
1†							*169.1*	*13.5*	86.2	43.6	0.4	96.2	0.51	71.2	8.37	0.80	59.4				
2							137.4	11.0	81.3	80.8	1.0	99.9	0.99	58.3	6.47	0.78	53.8				
3							135.1	10.8	328.0	152.7	1.8	363.1	0.47	209.9	6.76	0.78	54.8				
4							137.3	11.0	195.7	170.7	2.2	235.0	0.87	132.2	4.80	0.75	47.5				
Mean Age (Ma) and Std Dev (Ma)							**136.6**	**5.5****													
SM-16	Zs	36.3953	-115.8046	2.56	9.0	1.7															
1†							*171.0*	*13.7*	194.3	174.8	3.4	234.6	0.90	152.3	2.78	0.69	38.0				
2							110.1	8.8	306.0	28.5	0.4	312.6	0.09	137.8	3.97	0.74	43.0				
3							136.7	10.9	354.2	320.7	13.5	428.1	0.91	224.0	2.80	0.70	39.1				
4							131.5	10.5	161.9	43.9	0.7	172.0	0.27	90.1	3.80	0.73	42.6				
5							126.4	10.1	414.5	148.2	2.1	448.6	0.36	218.7	2.53	0.71	39.1				
Mean Age (Ma) and Std Dev (Ma)							**126.2**	**11.5**													
SM-17*	Zs	36.3987	-115.8073	2.53	8.6	1.3															
1†							*283.8*	*22.7*	309.6	189.4	2.0	353.2	0.61	394.6	2.77	0.72	40.7				
2							151.9	12.2	75.5	90.8	1.3	96.4	1.20	62.3	8.22	0.78	54.2				
3							155.6	12.4	128.9	77.0	0.9	146.6	0.60	90.8	4.18	0.73	43.0				
4							194.4	15.6	113.5	104.4	3.2	137.5	0.92	112.8	5.85	0.77	51.9				
5							193.1	15.4	120.7	87.9	2.0	141.0	0.73	114.4	5.50	0.77	51.0				
Mean Age (Ma) and Std Dev (Ma)							**173.7**	**23.2**													
SM-18	ZCw	36.4047	-115.8064	2.54	8.2	0.9															
1							118.4	9.5	126.3	94.5	3.8	148.1	0.75	75.3	7.71	0.79	56.4				
2							132.8	10.6	148.8	119.2	4.6	176.3	0.80	96.5	4.70	0.76	48.4				
3							154.3	12.3	145.2	122.9	1.2	173.5	0.85	115.0	7.94	0.79	56.0				
4							153.2	12.3	167.3	112.1	2.4	193.2	0.67	125.4	7.56	0.78	53.0				
5†							*689.0*	*55.1*	38.7	27.9	0.3	45.2	0.72	141.8	9.02	0.80	59.7				
Mean Age (Ma) and Std Dev (Ma)							**139.7**	**17.3**													

SM-21	Oe	36.4679	-115.8158	1.63	5.7	-1.6														
1							187.6	15.0	49.9	45.0	0.6	60.3	0.90	50.0	9.79	0.81	62.6	1839.0	13.0	1831.2	8.4
5							197.8	15.8	51.4	47.1	2.6	62.3	0.92	52.0	6.30	0.77	52.2	1829.0	17.0	1850.0	11.0
6							210.5	16.8	49.2	56.1	0.7	62.2	1.14	58.5	11.32	0.81	65.7	1814.0	16.0	1870.0	9.0
7†							*287.5*	*23.0*	120.4	111.6	3.3	146.1	0.93	178.2	6.50	0.77	51.8	1788.0	16.0	1861.0	8.0
10							226.6	18.1	36.5	53.0	0.9	48.7	1.45	47.8	8.21	0.79	57.3	1816.0	17.0	1882.7	9.2
Mean Age (Ma) and Std Dev (Ma)							**205.6**	**16.8**													
SM-22	Dn	36.4726	-115.8048	1.65	5.2	-2.1														
4							211.7	16.9	100.5	30.6	0.7	107.5	0.30	101.9	11.21	0.82	64.4	1421.2	9.5	1434.8	8.1
5							155.5	12.4	101.8	36.5	1.9	110.2	0.36	70.3	4.30	0.75	46.8	1670.0	13.0	1727.1	6.5
8†							*286.2*	*22.9*	57.5	23.1	1.9	62.9	0.40	74.8	4.48	0.75	47.4	1649.0	18.0	1701.5	8.8
9							208.4	16.7	133.5	43.4	1.0	143.5	0.33	123.7	4.47	0.76	47.4	1399.0	11.0	1450.7	8.5
17							235.1	18.8	162.7	97.1	2.1	185.1	0.60	194.1	10.05	0.81	63.5	1339.8	9.6	1385.0	11.0
Mean Age (Ma) and Std Dev (Ma)							**202.7**	**33.6**													
Resting Spring Range																					
RS-2	Zs	36.2228	-116.2642	0.95	9.7	2.4														
1							119.9	9.6	18.9	20.4	1.1	23.6	1.08	12.8	14.74	0.83	71.3	1150.0	12.0	1232.0	14.0
2							124.1	9.9	107.4	28.2	1.5	113.9	0.26	65.6	21.20	0.85	80.3	1274.0	11.0	1422.0	11.0
6							133.3	10.7	163.6	107.7	1.6	188.4	0.66	115.0	17.12	0.84	75.4	1024.9	7.8	1024.9	9.2
8†							*34.9*	*2.8*	303.6	230.3	51.3	356.9	0.76	54.7	11.14	0.81	63.7	1646.0	14.0	1094.0	18.0
13							139.7	11.2	98.6	84.1	2.2	118.0	0.85	74.4	13.73	0.83	70.0	1689.0	12.0	1747.6	6.8
11							125.3	10.0	147.6	77.0	2.2	165.4	0.52	92.7	12.11	0.82	66.8	1019.9	9.0	1095.0	15.0
Mean Age (Ma) and Std Dev (Ma)							**128.5**	**7.9**													
RS-1	Zs	36.2248	-116.2595	1.01	9.3	2.0														
14†							*202.5*	*16.2*	79.4	71.9	1.9	96.0	0.91	83.6	8.01	0.78	55.7	2033.0	18.0	2067.0	14.0
15							153.9	12.3	75.6	81.1	6.7	94.3	1.07	59.5	4.68	0.75	47.7	1645.0	13.0	1694.7	7.0
18							127.4	10.2	68.8	42.3	1.2	78.5	0.62	41.3	5.18	0.76	48.6	1675.0	16.0	1735.0	10.0
19							141.2	11.3	202.0	66.1	1.7	217.2	0.33	126.9	4.57	0.76	48.2	1722.0	11.0	1792.1	9.3
Mean Age (Ma) and Std Dev (Ma)							**140.8**	**13.2**													
RS-3	Zs	36.2259	-116.2538	1.06	8.9	1.6														
5							156.8	12.5	121.4	67.8	1.2	137.0	0.56	92.6	8.57	0.79	56.3	1355.0	10.0	1433.9	9.6
7							139.2	11.1	178.7	51.1	0.8	190.5	0.29	120.1	14.10	0.83	70.1	1697.0	12.0	1793.3	6.1
13							150.9	12.1	89.0	175.0	2.1	129.3	1.97	81.7	7.06	0.76	51.6	1703.0	13.0	1767.8	8.9
16							141.5	11.3	261.1	117.3	6.1	288.2	0.45	181.0	11.85	0.81	63.9	1537.0	18.0	1709.3	6.6
Mean Age (Ma) and Std Dev (Ma)							**147.1**	**8.2**													
RS-4	ZCw	36.2262	-116.2483	1.11	8.5	1.2														
1†							*38.9*	*3.1*	316.5	584.6	114.4	451.7	1.85	78.2	14.70	0.82	67.4	966.0	13.0	1097.0	15.0
2							159.7	12.8	50.9	42.5	1.0	60.7	0.83	44.9	24.67	0.85	79.9	981.0	12.0	1052.0	15.0
13							152.4	12.2	119.1	110.7	4.2	144.6	0.93	90.9	6.94	0.75	48.5	1109.0	15.0	1088.0	17.0
15							147.6	11.8	83.4	80.0	3.4	101.8	0.96	67.2	14.16	0.82	66.7	1037.0	12.0	1079.0	13.0
18							165.4	13.2	71.5	56.3	1.6	84.5	0.79	61.8	11.35	0.81	62.8	1003.2	9.4	1084.0	12.0
Mean Age (Ma) and Std Dev (Ma)							**156.3**	**7.8**													
RS-5	ZCw	36.2282	-116.2428	1.12	8.2	0.9														
3							150.8	12.1	107.8	47.8	2.6	118.8	0.44	77.1	7.29	0.79	55.9	1468.0	13.0	1435.7	8.5
4							295.7	23.7	23.7	21.8	0.8	28.7	0.92	36.1	6.47	0.77	52.2	1097.0	12.0	1144.0	17.0
7							208.3	16.7	114.5	102.0	1.7	138.0	0.89	114.0	3.22	0.72	42.4	1445.0	15.0	1437.0	12.0
15							177.0	14.2	42.9	33.5	0.7	50.6	0.78	38.0	5.95	0.78	53.1	1217.0	15.0	1246.0	18.0
17							212.6	17.0	47.5	41.7	2.4	57.1	0.88	50.8	5.17	0.76	50.0	1713.0	25.0	1698.0	19.0
Mean Age (Ma) and Std Dev (Ma)							**ND**	**ND**													
RS-6	Cz	36.2290	-116.2391	1.15	7.9	0.6														
2							151.1	12.1	145.6	42.0	1.1	155.2	0.29	103.9	10.63	0.81	62.6	1438.0	11.0	1423.4	8.7
6							143.5	11.5	108.1	37.0	14.3	116.7	0.34	68.8	4.45	0.75	47.0	1661.0	14.0	1694.5	8.2
8							149.0	11.9	118.9	50.3	0.9	130.5	0.42	79.0	4.18	0.75	45.6	1698.0	16.0	1701.5	9.6
10							148.5	11.9	120.6	57.0	1.0	133.7	0.47	87.3	9.64	0.81	61.2	1452.0	12.0	1463.7	7.6
Mean Age (Ma) and Std Dev (Ma)							**148.0**	**6.0****													
Southern Nopah Range																					
BW-3	Xg	35.8240	-116.1482	0.62	13.2	6.2															
1							63.8	5.1	447.6	49.6	1.5	459.0	0.11	115.7	3.48	0.73	41.7				
2							76.2	6.1	249.6	45.7	0.7	260.1	0.18	79.1	3.75	0.74	43.3				
3							77.4	6.2	421.1	55.4	0.5	433.9	0.13	139.8	5.73	0.77	49.4				
Mean Age (Ma) and Std Dev (Ma)							**72.5**	**7.5**													
BW-13	Xg	35.8276	-116.1457	0.59	12.9	5.9															
1							68.1	5.4	787.1	71.1	1.1	803.5	0.09	220.0	4.46	0.74	44.0				
2							58.2	4.7	342.2	61.9	0.7	356.5	0.18	82.3	3.67	0.73	42.5				
3							61.7	4.9	458.5	60.7	0.7	472.4	0.13	122.7	6.56	0.78	51.8				
BW-12	Xg	35.8303	-116.1462	0.59	12.8	5.8															
1†							*87.0*	*7.0*	737.4	58.9	1.2	751.0	0.08	270.6	6.00	0.76	48.2				
2							60.1	4.8	452.6	72.0	0.8	469.2	0.16	116.8	5.70	0.77	48.9				
3							70.4	5.6	563.9	70.4	0.6	580.2	0.12	167.9	5.33	0.76	47.4				
Mean Age (Ma) and Std Dev (Ma)				**pooled BW12, BW13**			**63.7**	**7.3**													

BW-11	Xg	35.8324	-116.1414	0.62	12.4	5.4															
1							79.0	6.3	837.1	105.0	1.0	861.3	0.13	289.1	6.88	0.78	53.3				
2							89.6	7.2	665.3	93.5	0.9	686.8	0.14	249.6	4.57	0.75	45.1				
3							86.7	6.9	456.6	53.4	0.6	468.9	0.12	163.5	3.73	0.74	43.9				
Mean Age (Ma) and Std Dev (Ma)							**85.1**	**5.5**													
BW-9	Xg	35.8362	-116.1373	0.64	11.9	4.9															
1							63.5	5.1	340.8	38.5	0.6	349.6	0.11	93.5	7.19	0.78	51.8				
2							87.5	7.0	325.0	44.5	1.1	335.3	0.14	120.1	5.45	0.76	46.7				
3							67.4	5.4	665.2	79.6	0.2	683.5	0.12	183.4	3.69	0.74	42.8				
BW-8	Xg	35.8390	-116.1368	0.64	11.8	4.8															
10							107.9	8.6	394.4	228.7	19.4	447.1	0.58	196.6	4.72	0.75	46.6				
2							75.9	6.1	261.5	90.0	4.7	282.3	0.34	93.5	10.04	0.80	60.2				
3							104.6	8.4	320.1	127.2	1.1	349.4	0.40	151.3	5.30	0.76	48.8				
Mean Age (Ma) and Std Dev (Ma)				**pooled BW8, BW9**			**84.5**	**18.8**													
BW-7	Xg	35.8433	-116.1306	0.65	11.5	4.5															
1							95.6	7.6	260.7	150.7	7.7	295.4	0.58	120.2	7.29	0.78	54.6				
2							96.4	7.7	346.2	94.8	1.5	368.1	0.27	148.0	6.57	0.77	50.1				
3							83.5	6.7	176.5	95.3	3.5	198.5	0.54	73.1	11.52	0.81	63.2				
Mean Age (Ma) and Std Dev (Ma)							**91.8**	**7.2**													
BW-6	Xg	35.8438	-116.1271	0.66	11.2	4.2															
1†							*301.4*	*24.1*	40.4	23.7	0.6	45.9	0.59	59.9	7.37	0.78	55.0				
2							88.6	7.1	554.9	43.1	1.0	564.8	0.08	196.0	3.21	0.72	40.5				
3							88.9	7.1	411.2	61.9	2.1	425.5	0.15	145.4	2.63	0.71	38.6				
Mean Age (Ma) and Std Dev (Ma)							**88.7**	**3.6****													
BW-5	Xg	35.8453	-116.1241	0.69	10.8	3.8															
1							103.6	8.3	271.6	45.9	0.6	282.2	0.17	123.4	6.21	0.78	51.8				
2							102.1	8.2	211.3	68.2	0.8	227.0	0.32	95.7	5.54	0.76	48.4				
3							104.4	8.3	480.8	115.7	1.3	507.4	0.24	216.9	5.22	0.75	46.8				
BW-4	Xg	35.8465	-116.1241	0.73	10.8	3.8															
1							105.8	8.5	159.6	19.7	0.5	164.1	0.12	71.5	5.28	0.76	47.3				
2							108.2	8.7	143.7	21.8	0.3	148.8	0.15	66.1	4.72	0.76	46.8				
3							90.1	7.2	448.0	75.0	3.0	465.2	0.17	167.8	3.85	0.74	43.5				
Mean Age (Ma) and Std Dev (Ma)				**pooled BW4, BW5**			**102.4**	**6.4**													
NR-1	Zj	35.8403	-116.1146	0.96	9.9	2.9															
1							*73.8*	*5.9*	129.0	236.7	3.8	183.5	1.84	58.0	7.78	0.79	57.1	1629.0	10.0	1787.8	7.9
3							89.1	7.1	80.7	139.0	2.1	112.7	1.72	40.6	4.22	0.74	46.5	1646.0	12.0	1681.7	7.0
7							96.7	7.7	106.6	86.4	2.5	126.5	0.81	50.9	5.10	0.76	50.3	1358.0	11.0	1399.9	7.1
11							91.3	7.3	128.7	174.4	1.9	168.9	1.35	69.0	13.07	0.82	68.6	1611.0	13.0	1687.4	6.9
12							112.2	9.0	303.2	177.1	9.9	344.0	0.58	165.5	8.41	0.79	55.9	1699.0	11.0	1747.9	6.6
Mean Age (Ma) and Std Dev (Ma)							**97.3**	**10.4**													
NR-2	Zj	35.8406	-116.1108	0.93	9.7	2.7															
1							110.2	8.8	93.5	60.5	0.9	107.4	0.65	51.4	9.50	0.80	59.0	1402.0	11.0	1478.2	9.6
2							97.1	7.8	81.9	85.7	1.8	101.6	1.05	42.3	8.12	0.79	56.8	1023.0	13.0	1123.0	19.0
3							89.0	7.1	58.8	55.4	1.2	71.6	0.94	28.1	10.78	0.81	63.8	1049.0	11.0	1118.7	9.3
5							101.7	8.1	69.5	51.4	0.9	81.3	0.74	37.1	14.30	0.82	68.5	1003.0	13.0	1075.0	15.0
9							93.2	7.5	104.5	119.0	1.8	131.9	1.14	51.0	5.80	0.76	50.3	1576.0	13.0	1636.3	8.6
Mean Age (Ma) and Std Dev (Ma)							**98.2**	**8.2**													
NR-4	Zs	35.8440	-116.1052	1.00	9.1	2.1															
1							118.0	9.4	71.9	37.9	1.6	80.6	0.53	42.6	12.69	0.82	67.1	1632.0	15.0	1694.9	8.8
5							120.5	9.6	97.7	50.3	1.2	109.2	0.52	60.6	19.76	0.84	77.4	1727.0	17.0	1770.0	8.3
7							111.1	8.9	128.0	50.5	2.7	139.6	0.39	64.4	5.05	0.76	49.1	1429.0	12.0	1419.3	8.6
10							118.5	9.5	60.3	39.3	1.0	69.4	0.65	36.7	11.61	0.82	66.5	2990.0	22.0	3101.7	7.0
14							117.3	9.4	147.0	35.1	2.1	155.1	0.24	79.5	8.17	0.80	59.3	1799.0	14.0	1784.9	7.1
Mean Age (Ma) and Std Dev (Ma)							**117.1**	**4.7****													
NR-5	Zs	35.8443	-116.1041	1.05	8.7	1.7															
3							118.5	9.5	142.3	91.1	1.7	163.2	0.64	80.8	5.80	0.77	50.6	1172.0	19.0	1165.3	8.9
10							92.9	7.4	176.3	115.0	2.6	202.7	0.65	80.8	8.01	0.79	56.2	1682.0	12.0	1712.3	7.5
20†							*79.9*	*6.4*	284.3	593.8	18.9	421.1	2.09	144.3	8.71	0.78	57.1	1357.0	13.0	1416.0	11.0
22							89.6	7.2	533.9	498.7	22.7	648.8	0.93	248.1	8.28	0.78	55.6	1522.0	17.0	1742.0	11.0
25							107.5	8.6	136.8	94.6	3.3	158.6	0.69	72.0	7.36	0.78	52.9	1160.0	11.0	1171.3	9.1
Mean Age (Ma) and Std Dev (Ma)							**102.1**	**13.4**													
NR-6	Zs	35.8457	-116.0986	1.16	8.3	1.3															
1†							*246.5*	*19.7*	242.1	104.0	1.3	266.1	0.43	264.3	3.57	0.73	43.5	1772.0	12.0	1789.2	7.4
2†							*236.3*	*18.9*	150.3	156.8	2.4	186.4	1.04	187.7	6.33	0.77	53.4	1718.0	13.0	1796.3	6.7
6							136.5	10.9	80.8	43.8	1.1	90.9	0.54	52.1	5.57	0.77	51.2	1695.0	13.0	1699.2	9.0
7							119.6	9.6	335.4	226.0	2.7	387.4	0.67	180.8	3.02	0.72	41.0	1753.0	12.0	1790.0	6.7
14							167.6	13.4	166.6	138.5	5.1	198.5	0.83	143.4	7.22	0.79	56.6	1644.0	17.0	1676.2	9.2
Mean Age (Ma) and Std Dev (Ma)							**141.2**	**24.3**													
NR-7	ZCw	35.8464	-116.0925	1.15	7.9	0.9															
5							120.6	9.6	186.6	68.7	1.3	202.5	0.37	108.1	12.10	0.81	63.4	1077.0	12.0	1098.8	9.3
16							129.0	10.3	242.5	118.6	1.8	269.9	0.49	152.9	11.38	0.81	61.1	1078.1	8.0	1093.2	6.9
18†							*183.6*	*14.7*	45.1	25.5	0.8	51.0	0.57	42.1	14.08	0.82	67.3				
20							161.8	12.9	46.3	72.1	3.7	62.9	1.56	44.7	10.54	0.80	61.7	1020.0	10.0	1081.0	14.0
22							143.6	11.5	72.0	75.8	2.4	89.5	1.05	57.7	16.67	0.82	68.5	1035.0	11.0	1091.0	10.0
Mean Age (Ma) and Std Dev (Ma)							**138.8**	**18.1**													

NR-8	ZCw	35.8478	-116.0924	1.23	7.8	0.8														
9							143.8	11.5	4.9	17.5	0.7	9.0	3.55	6.1	30.74	0.86	89.5	942.0	21.0	1162.0	44.0
10†							*185.2*	*14.8*	50.2	64.2	3.9	65.0	1.28	52.8	11.70	0.80	60.8	1014.0	10.0	1083.0	17.0
11							152.3	12.2	155.2	74.0	1.0	172.2	0.48	119.7	16.10	0.84	73.1	1051.1	9.3	1090.0	12.0
12							122.9	9.8	143.4	94.4	1.7	165.1	0.66	88.7	9.98	0.80	60.5	1067.0	9.5	1079.9	9.7
13							158.3	12.7	105.6	51.0	8.1	117.4	0.48	81.5	10.06	0.80	60.3	1041.2	8.6	1110.0	13.0
Mean Age (Ma) and Std Dev (Ma)							**144.3**	**15.5**													
NR-9	Cz	35.8488	-116.0874	1.25	7.5	0.5														
2							123.7	9.9	29.1	22.4	7.8	34.3	0.77	19.8	26.32	0.86	85.3	1624.0	18.0	1699.0	11.0
4							122.3	9.8	197.4	161.4	19.4	234.6	0.82	121.2	6.34	0.77	52.8	1352.0	13.0	1442.0	7.6
5							150.0	12.0	77.2	73.4	1.5	94.1	0.95	62.0	9.90	0.80	61.7	1352.0	12.0	1426.0	12.0
14							139.6	11.2	109.2	79.5	34.2	127.7	0.73	72.1	4.22	0.74	45.4	1066.0	11.0	1094.0	13.0
17							119.8	9.6	191.7	210.9	97.5	240.7	1.10	115.1	3.77	0.73	44.0	1039.9	9.0	1074.0	17.0
Mean Age (Ma) and Std Dev (Ma)							**132.9**	**14.4**													

Rock units: Xg- basement gneiss; Zj- Johnnie Fm; Zs- Stirling Qtzite; ZCw- Wood Canyon Fm; Cz- Zabriskie Qtzite; Oe- Eureka Qtzite; Dn- Nevada Fm

† - outlier as identified by modified Z value method (Iglewicz and Hoaglin (1993), not included in calculation of sample mean and standard deviation

** - Standard deviation (Std Dev) < 4% standard error, adopt 4% standard error

ND - Sample mean age and standard deviation not reported due to large dispersion in grain ages

*Ft is the alpha ejection correction of Farley et al. (1996)

Table DR2. U/Pb data of pre-screened zircon grains

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
Southern Nopah Range													
MG11NR1 (N=16)													
01	1629.0	10.0	1699.6	6.2	4.3	1698.0	19.0	50.1	1.7	61.1	2.0	1787.8	7.9
02	1561.0	15.0	1590.8	8.1	1.9	1666.0	18.0	85.3	9.8	103.0	15.0	1643.2	8.8
03	1646.0	12.0	1661.8	7.2	1.0	1703.0	19.0	82.2	3.4	71.1	5.3	1681.7	7.0
04	1562.0	13.0	1607.2	6.2	2.9	1545.0	20.0	262.1	5.3	118.6	4.2	1681.1	7.4
05	1602.0	16.0	1637.3	9.1	2.2	1327.0	59.0	363.8	5.9	106.0	18.0	1694.0	14.0
06	1350.0	14.0	1387.7	7.4	2.8	1390.0	15.0	81.2	4.8	79.5	5.0	1450.0	11.0
07	1358.0	11.0	1370.1	5.5	0.9	1380.0	10.0	116.5	7.5	123.9	7.6	1399.9	7.1
08	1393.0	17.0	1479.0	8.8	6.2	1577.0	24.0	49.8	3.3	78.3	5.1	1615.3	9.5
09	1395.0	12.0	1519.5	7.6	8.9	1040.0	21.0	232.9	5.5	211.2	6.2	1691.6	6.5
11	1611.0	13.0	1645.0	7.3	2.1	1654.0	23.0	84.0	5.8	81.6	3.9	1687.4	6.9
12	1699.0	11.0	1719.4	5.9	1.2	1715.0	20.0	168.2	4.9	115.4	9.3	1747.9	6.6
13	1383.0	14.0	1403.6	8.8	1.5	1385.0	13.0	81.5	4.9	145.8	6.5	1441.3	9.7
14	1646.0	15.0	1660.4	7.2	0.9	1603.0	14.0	177.2	6.4	155.1	4.7	1681.2	6.6
15	1629.0	21.0	1651.4	9.9	1.4	1843.0	28.0	160.9	9.4	90.2	2.5	1682.9	8.3
16	1637.0	13.0	1654.9	6.9	1.1	1673.0	17.0	176.0	12.0	204.8	7.2	1688.8	7.3
17	1164.0	13.0	1230.0	18.0	5.7	1257.0	44.0	79.0	5.1	74.8	4.7	1356.0	40.0
18	1301.0	15.0	1345.0	8.4	3.4	1487.0	15.0	210.9	7.8	324.0	14.0	1420.0	13.0
MG11NR2 (N=28)													
01	1402.0	11.0	1426.1	6.2	1.7	1422.0	15.0	111.0	12.0	66.2	3.2	1478.2	9.6
02	1023.0	13.0	1054.9	9.8	3.1	1002.0	16.0	55.8	9.9	62.7	9.4	1123.0	19.0
03	1049.0	11.0	1071.8	7.8	2.2	1073.0	14.0	53.6	3.5	55.6	3.7	1118.7	9.3
04	1308.0	14.0	1323.0	11.0	1.1	1294.0	16.0	59.1	2.7	61.1	3.9	1359.0	11.0
05	1003.0	13.0	1028.5	9.8	2.5	970.0	19.0	28.1	0.9	23.9	0.5	1075.0	15.0
06	1177.0	12.0	1189.3	7.6	1.0	1147.0	13.0	155.6	4.6	100.0	4.7	1209.2	9.2
07	1081.0	11.0	1116.7	9.0	3.3	1103.0	24.0	28.3	2.0	24.6	1.5	1190.0	16.0
08	1335.0	14.0	1341.0	9.2	0.4	1303.0	12.0	78.1	6.1	140.2	9.1	1356.5	6.9
09	1576.0	13.0	1599.6	7.3	1.5	1547.0	14.0	43.6	2.1	97.2	4.6	1636.3	8.6
10	990.0	9.8	1010.5	7.8	2.1	977.0	14.0	50.1	2.0	37.9	1.2	1057.0	13.0
11	1309.0	14.0	1337.6	8.8	2.2	1279.0	14.0	63.4	4.8	110.6	7.6	1375.0	10.0
12	1149.0	16.0	1189.0	15.0	3.5	1117.0	29.0	13.8	2.0	18.0	3.1	1281.0	28.0
13	1392.0	18.0	1401.0	12.0	0.6	1365.0	24.0	21.0	1.8	32.5	3.2	1409.0	13.0
14	971.0	18.0	991.0	13.0	2.1	824.0	17.0	139.6	8.1	73.6	5.5	1044.4	7.4
15	1560.0	17.0	1621.0	12.0	3.9	1510.0	45.0	58.8	4.2	58.0	5.3	1696.1	9.6
16	1253.0	27.0	1325.0	17.0	5.7	1078.0	40.0	310.0	22.0	411.0	39.0	1461.2	9.6
17	1666.0	19.0	1670.0	11.0	0.2	1630.0	36.0	56.5	1.2	89.0	1.4	1678.1	9.5
18	1556.0	21.0	1662.0	11.0	6.8	944.0	19.0	133.1	4.1	106.2	3.7	1801.4	7.5
19	1328.0	11.0	1339.0	7.1	0.8	1313.0	19.0	66.5	4.3	56.3	3.8	1356.0	10.0
20	1379.0	12.0	1411.0	7.3	2.3	1353.0	14.0	63.3	2.3	141.6	4.4	1475.0	11.0

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
21	1008.0	11.0	1020.8	7.7	1.3	976.0	17.0	78.2	9.1	42.8	5.0	1045.0	13.0
22	2547.0	30.0	2661.0	10.0	4.5	2601.0	32.0	35.3	2.2	42.7	3.2	2744.0	10.0
23	1419.0	13.0	1429.9	8.0	0.8	1389.0	17.0	99.7	3.8	54.5	1.5	1462.0	10.0
24	2535.0	26.0	2617.0	11.0	3.2	2438.0	43.0	54.4	1.6	34.9	0.7	2694.6	6.2
25	1323.0	14.0	1347.0	8.2	1.8	1348.0	15.0	58.2	3.2	110.6	6.9	1397.0	12.0
26	1582.0	36.0	1690.0	46.0	6.8	1470.0	170.0	141.0	29.0	123.0	12.0	1811.0	55.0
27	1427.0	21.0	1454.0	15.0	1.9	1429.0	19.0	18.3	2.3	57.6	5.7	1503.0	14.0
28	1139.0	10.0	1146.3	7.3	0.6	1128.0	23.0	97.0	4.0	40.1	1.6	1168.0	14.0
MG11NR4 (N=14)													
01	1632.0	15.0	1659.3	7.4	1.7	1636.0	20.0	81.0	4.0	49.4	1.4	1694.9	8.8
02	1256.0	13.0	1325.5	6.8	5.5	1269.0	12.0	172.2	5.5	143.3	3.8	1444.2	8.1
03	1686.0	15.0	1698.5	6.7	0.7	1672.0	17.0	146.6	9.0	91.1	5.5	1722.6	8.1
04	1118.0	11.0	1132.6	9.2	1.3	1106.0	14.0	66.4	4.9	89.5	8.5	1174.0	11.0
05	1727.0	17.0	1744.5	9.6	1.0	1763.0	30.0	95.0	10.0	120.0	14.0	1770.0	8.3
06	1365.0	15.0	1397.9	9.3	2.4	1385.0	24.0	81.0	10.0	51.8	5.8	1457.3	9.6
07	1429.0	12.0	1422.7	8.0	-0.4	1447.0	23.0	69.8	3.2	26.5	0.6	1419.3	8.6
08	1068.0	13.0	1084.7	9.2	1.6	1072.0	23.0	40.4	2.8	50.2	6.1	1138.0	11.0
09	1578.0	12.0	1586.5	6.3	0.5	1579.0	19.0	83.9	0.9	85.6	4.4	1610.2	9.0
10	2990.0	22.0	3051.3	7.7	2.1	3036.0	29.0	50.4	2.0	64.7	2.6	3101.7	7.0
11	1610.0	11.0	1625.6	7.0	1.0	1661.0	15.0	109.0	3.0	146.8	7.1	1654.6	9.2
12	1687.0	11.0	1690.3	5.2	0.2	1724.0	17.0	239.1	6.7	83.8	1.6	1699.7	7.5
13	1722.0	14.0	1710.8	8.2	-0.7	1734.0	20.0	94.0	6.2	73.6	1.9	1712.7	8.4
14	1799.0	14.0	1790.3	7.3	-0.5	1840.0	31.0	231.0	19.0	57.6	3.4	1784.9	7.1
MG11NR5 (N=24)													
01	1366.0	11.0	1383.1	7.9	1.3	1420.0	22.0	39.1	1.7	26.7	0.9	1418.0	16.0
02	1459.0	52.0	1573.0	33.0	7.8	1344.0	43.0	370.0	38.0	358.0	40.0	1740.5	8.4
03	1172.0	19.0	1170.0	11.0	0.2	1191.0	14.0	158.0	28.0	107.0	17.0	1165.3	8.9
04	1674.0	12.0	1700.4	5.7	1.6	1720.0	21.0	182.0	11.0	198.0	14.0	1730.4	7.8
05	1592.0	15.0	1653.3	9.3	3.9	1667.0	31.0	38.6	1.1	22.7	0.8	1754.0	14.0
06	1632.0	11.0	1683.0	6.5	3.1	1636.0	16.0	350.0	12.0	145.9	1.9	1738.8	9.3
07	996.0	13.0	1031.0	11.0	3.5	1073.0	20.0	26.8	1.9	28.5	1.6	1115.0	19.0
08	1652.0	13.0	1693.9	6.0	2.5	1772.0	14.0	231.0	17.0	176.0	16.0	1752.7	6.5
09	1500.0	12.0	1602.1	6.9	6.8	1486.0	32.0	154.6	4.0	233.0	18.0	1737.9	8.0
10	1682.0	12.0	1695.9	5.1	0.8	1696.0	16.0	176.0	11.0	136.0	12.0	1712.3	7.5
12	1690.0	21.0	1710.7	9.3	1.2	1434.0	35.0	208.2	8.1	252.0	12.0	1746.0	17.0
13	1510.0	20.0	1598.0	10.0	5.8	1354.0	38.0	224.0	18.0	254.0	11.0	1713.0	12.0
14	1286.0	13.0	1347.2	8.2	4.8	1248.0	22.0	126.0	5.5	91.9	4.0	1451.0	11.0
15	1341.0	33.0	1493.0	22.0	11.3	1100.0	25.0	451.0	20.0	245.0	12.0	1717.0	7.0
16*	1020.0	46.0	1299.0	36.0	27.4	525.0	14.0	857.0	76.0	238.8	8.6	1787.0	13.0
18	1379.0	29.0	1527.0	16.0	10.7	899.0	25.0	380.0	12.0	144.3	5.5	1744.5	9.9

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
19	1641.0	33.0	1688.0	18.0	2.9	1432.0	49.0	398.0	31.0	163.0	16.0	1757.0	12.0
20	1357.0	13.0	1380.0	9.8	1.7	1395.0	21.0	56.0	11.0	65.9	7.6	1416.0	11.0
21	2509.0	21.0	2614.0	10.0	4.2	2486.0	34.0	78.8	4.6	67.1	3.2	2695.0	8.0
22	1522.0	17.0	1622.4	8.5	6.6	1299.0	71.0	185.0	18.0	232.0	27.0	1742.0	11.0
23	1390.0	11.0	1411.9	5.9	1.6	1371.0	13.0	121.1	6.0	143.1	5.9	1453.1	7.8
24	1746.0	15.0	1731.0	7.1	0.9	1754.0	15.0	196.0	17.0	261.0	20.0	1720.0	8.4
25	1160.0	11.0	1165.0	6.3	0.4	1141.0	13.0	99.7	4.1	60.6	2.0	1171.3	9.1
26	1713.0	13.0	1729.2	7.4	0.9	1701.0	15.0	225.0	10.0	266.0	15.0	1741.0	6.8
MG11NR6 (N=19)													
01	1772.0	12.0	1784.2	6.7	0.7	1754.0	18.0	242.0	20.0	218.0	19.0	1789.2	7.4
02	1718.0	13.0	1750.2	6.3	1.9	1724.0	15.0	143.0	16.0	204.0	23.0	1796.3	6.7
03	2611.0	19.0	2620.6	7.2	0.4	2571.0	22.0	142.0	18.0	274.0	21.0	2631.6	5.7
04	1593.0	22.0	1679.0	12.0	5.4	1209.0	56.0	418.0	13.0	283.0	16.0	1792.6	6.0
05	1834.0	12.0	1815.3	5.7	1.0	1751.0	25.0	259.6	8.6	49.6	1.5	1794.3	5.5
06	1695.0	13.0	1697.3	6.0	0.1	1722.0	18.0	80.2	2.0	51.7	1.1	1699.2	9.0
07	1753.0	12.0	1767.6	6.3	0.8	1732.0	16.0	249.0	22.0	213.0	21.0	1790.0	6.7
08	2523.0	16.0	2555.3	6.5	1.3	2505.0	20.0	182.9	6.8	257.0	17.0	2583.9	6.2
10	1414.0	18.0	1428.0	8.5	1.0	1729.0	34.0	112.3	8.9	80.8	4.5	1443.0	12.0
11	1717.0	13.0	1749.4	6.5	1.9	1772.0	24.0	162.0	16.0	92.6	7.1	1784.4	7.1
12	1670.0	18.0	1718.0	11.0	2.9	1714.0	24.0	76.1	1.8	127.5	8.0	1779.2	9.6
13	1626.0	17.0	1697.5	9.0	4.4	1350.0	26.0	293.0	11.0	216.0	11.0	1782.2	5.0
14	1644.0	17.0	1657.0	10.0	0.8	1568.0	28.0	102.7	7.4	88.5	5.6	1676.2	9.2
15*	528.0	20.0	828.0	25.0	56.8	1302.0	48.0	1560.0	130.0	338.0	25.0	1754.0	17.0
17	1165.0	19.0	1243.0	11.0	6.7	1061.0	33.0	107.7	3.7	140.6	6.9	1399.0	12.0
18	2519.0	24.0	2572.0	10.0	2.1	2482.0	23.0	182.0	15.0	414.0	35.0	2615.0	5.1
19	1402.0	11.0	1411.8	7.4	0.7	1385.1	9.5	87.6	6.3	179.0	11.0	1408.0	10.0
20	2461.0	25.0	2723.0	10.0	10.6	2469.0	32.0	91.9	1.3	124.6	4.6	2923.6	7.8
21	1756.0	15.0	1767.7	8.5	0.7	1737.0	33.0	231.0	19.0	91.0	10.0	1788.5	8.7
22	1556.0	20.0	1658.0	13.0	6.6	891.0	25.0	129.4	8.3	119.0	4.9	1785.2	6.8
MG11NR7 (N=29)													
01	1099.0	11.0	1094.3	9.7	0.4	1043.0	15.0	68.5	3.4	55.2	2.7	1093.0	13.0
02*	601.7	9.6	723.7	7.2	20.3	1038.0	16.0	1590.0	130.0	301.0	13.0	1118.0	9.0
03	1087.0	19.0	1095.0	12.0	0.7	1076.0	21.0	63.5	5.9	48.4	3.5	1124.0	14.0
04	1065.5	9.2	1072.3	5.8	0.6	1064.0	13.0	167.9	6.4	122.8	3.7	1091.5	8.7
05	1077.0	12.0	1088.5	8.7	1.1	1046.0	13.0	195.0	20.0	140.0	13.0	1098.8	9.3
06	1009.1	9.2	1027.0	8.0	1.8	1014.0	20.0	76.0	10.0	28.1	2.7	1071.0	16.0
07	1109.0	10.0	1105.6	7.4	0.3	1114.0	12.0	171.0	22.0	129.0	13.0	1094.0	10.0
08	1056.0	10.0	1060.7	7.5	0.4	1057.0	18.0	53.1	4.9	27.7	2.3	1069.0	14.0
09	1067.8	9.4	1077.3	7.0	0.9	1083.0	18.0	88.4	5.4	45.0	2.2	1096.0	11.0
10	1045.2	9.7	1063.5	6.4	1.8	1048.0	14.0	125.0	15.0	82.7	7.2	1108.0	15.0

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
11	1053.5	9.1	1054.5	5.9	0.1	1060.0	16.0	44.1	2.9	27.9	1.5	1074.0	16.0
12	1066.9	8.7	1074.0	5.6	0.7	1053.0	13.0	142.0	10.0	86.7	5.2	1093.0	10.0
13	1062.6	8.8	1070.6	7.5	0.8	1057.0	13.0	155.0	18.0	110.0	13.0	1088.0	12.0
14	1093.0	13.0	1088.9	6.6	0.4	1196.0	16.0	125.4	3.1	68.8	1.9	1090.7	9.2
15	1064.9	7.6	1075.3	6.4	1.0	1052.0	11.0	160.4	8.4	105.8	1.6	1102.0	10.0
16	1078.1	8.0	1081.9	5.9	0.4	1042.0	12.0	242.0	27.0	113.6	8.6	1093.2	6.9
20	1020.0	10.0	1045.0	7.3	2.5	1132.0	28.0	62.7	5.4	26.6	1.5	1081.0	14.0
21	1079.0	11.0	1075.4	7.5	0.3	1076.0	15.0	84.6	6.4	89.5	7.0	1074.0	11.0
22	1035.0	11.0	1050.9	6.5	1.5	1063.0	12.0	109.0	11.0	158.0	17.0	1091.0	10.0
23	1077.3	9.3	1099.4	6.8	2.1	1069.0	12.0	75.1	5.8	78.3	6.0	1137.0	11.0
24	1061.8	7.7	1072.0	4.4	1.0	1050.0	15.0	185.0	24.0	147.0	17.0	1099.5	6.8
25	1078.0	11.0	1084.9	9.1	0.6	1050.0	19.0	221.0	44.0	31.6	1.2	1105.0	14.0
26	1040.9	7.8	1059.4	6.2	1.8	1060.0	15.0	119.0	19.0	110.0	13.0	1095.0	12.0
27	1013.5	8.2	1031.0	6.1	1.7	1021.0	13.0	192.0	17.0	105.9	8.2	1063.8	8.8
28	1016.5	6.9	1034.8	4.9	1.8	1007.0	12.0	178.0	10.0	140.1	8.5	1073.0	10.0
29	1069.7	9.6	1079.8	6.4	0.9	1049.0	19.0	109.0	23.0	57.2	7.2	1086.0	12.0
MG11NR8 (N=29)													
01	1058.0	12.0	1063.0	8.4	0.5	1130.0	27.0	29.2	3.8	19.8	2.6	1090.0	19.0
02	1289.0	12.0	1304.2	7.4	1.2	1332.0	19.0	57.0	7.5	48.3	5.1	1326.0	12.0
03	1048.0	12.0	1065.3	7.9	1.7	1073.0	17.0	118.0	17.0	81.0	11.0	1095.0	11.0
04	1069.0	13.0	1069.4	8.1	0.0	1084.0	16.0	123.0	13.0	97.0	7.9	1072.0	11.0
05	1009.0	11.0	1041.9	7.5	3.3	1087.0	12.0	205.0	20.0	158.0	15.0	1100.4	9.4
06	976.0	11.0	1012.4	8.3	3.7	1108.0	20.0	42.2	1.4	35.6	0.8	1086.0	20.0
07	1076.1	8.1	1076.5	5.6	0.0	1073.0	13.0	181.0	15.0	105.7	9.7	1082.6	7.9
08	801.0	18.0	901.0	13.0	12.5	675.0	26.0	51.9	2.6	56.9	3.3	1141.0	26.0
09	942.0	21.0	997.0	22.0	5.8	1211.0	73.0	3.8	0.2	3.1	0.3	1162.0	44.0
10	1014.0	10.0	1037.4	8.8	2.3	1050.0	17.0	34.6	2.4	26.5	0.9	1083.0	17.0
11	1051.1	9.3	1061.9	6.8	1.0	1072.0	13.0	104.2	3.6	61.3	1.4	1090.0	12.0
12	1067.0	9.5	1068.3	5.6	0.1	1050.0	14.0	109.0	12.0	82.0	11.0	1079.9	9.7
13	1041.2	8.6	1063.3	7.3	2.1	1047.0	15.0	62.6	4.8	42.8	3.2	1110.0	13.0
14	1003.8	8.9	1037.7	7.0	3.4	1030.0	16.0	60.2	6.1	54.6	6.6	1114.0	11.0
15	1013.2	9.2	1035.1	6.7	2.2	1036.0	15.0	105.1	6.7	85.2	6.8	1085.0	11.0
16	1056.5	8.4	1058.3	5.7	0.2	1031.0	13.0	261.0	23.0	76.4	6.9	1063.9	8.1
17	1030.4	7.5	1056.9	5.4	2.6	1046.0	12.0	131.0	16.0	108.4	4.6	1106.4	9.5
18	988.0	10.0	1025.9	7.2	3.8	1025.0	16.0	61.3	6.9	60.5	7.2	1108.0	12.0
19	1023.9	7.9	1045.0	5.8	2.1	1010.0	13.0	137.0	10.0	114.6	8.9	1081.0	11.0
20	1538.0	17.0	1585.4	8.6	3.1	1564.0	21.0	55.2	2.9	53.7	3.6	1647.0	10.0
21	1048.0	13.0	1077.0	10.0	2.8	1101.0	21.0	24.9	2.1	30.6	3.2	1139.0	19.0
22	992.0	11.0	1024.7	7.5	3.3	1030.0	11.0	132.0	14.0	99.0	6.0	1095.0	11.0
23	1044.5	8.9	1054.5	6.1	1.0	1031.0	16.0	71.2	7.4	50.6	5.5	1090.0	13.0

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
24	1065.7	8.0	1074.0	5.1	0.8	1018.0	15.0	220.0	31.0	63.7	3.0	1094.1	8.6
25	1254.0	16.0	1335.0	20.0	6.5	1334.0	29.0	36.8	1.6	54.1	1.8	1471.0	37.0
26	1073.0	13.0	1121.0	14.0	4.5	1118.0	34.0	34.0	1.0	23.0	0.6	1211.0	23.0
27	1034.0	10.0	1075.2	9.8	4.0	1085.0	17.0	33.5	2.3	33.7	2.1	1157.0	19.0
28	1014.0	12.0	1035.0	8.4	2.1	1034.0	21.0	47.1	6.5	37.6	5.5	1077.0	17.0
29	1003.0	11.0	1027.0	11.0	2.4	1016.0	21.0	27.9	0.5	26.1	1.0	1073.0	17.0
30	987.4	8.6	1032.3	6.5	4.5	998.0	13.0	144.0	12.0	97.4	9.0	1116.0	11.0
MG11NR9 (N=19)													
01	1379.0	14.0	1400.5	7.1	1.6	1385.0	17.0	74.5	4.9	59.9	3.4	1438.0	10.0
02	1624.0	18.0	1654.0	11.0	1.8	1570.0	33.0	34.4	1.4	16.1	0.8	1699.0	11.0
03	1021.0	11.0	1044.9	8.0	2.3	1072.0	16.0	46.6	3.2	55.1	3.7	1097.0	15.0
04	1352.0	13.0	1385.0	6.8	2.4	1337.0	17.0	198.7	8.0	122.0	4.3	1442.0	7.6
05	1352.0	12.0	1382.8	7.0	2.3	1371.0	21.0	59.7	0.7	66.3	0.8	1426.0	12.0
06	2394.0	17.0	2434.5	6.1	1.7	2356.0	25.0	109.2	4.9	68.7	1.8	2466.7	6.1
07	1276.0	11.0	1307.6	5.8	2.5	1285.0	17.0	168.2	6.4	111.0	4.4	1362.2	7.4
08	1011.0	12.0	1035.5	7.9	2.4	959.0	21.0	310.0	36.0	179.0	19.0	1105.2	7.5
09	1075.0	14.0	1080.3	8.2	0.5	1066.0	23.0	31.0	2.7	34.0	4.4	1097.0	16.0
10	1340.0	14.0	1382.6	8.6	3.2	1385.0	14.0	117.3	4.6	176.0	12.0	1440.0	8.7
11	994.6	7.8	1009.0	5.0	1.4	989.9	9.5	313.0	17.0	225.4	9.6	1042.9	8.2
12	1537.0	15.0	1576.7	7.1	2.6	1598.0	33.0	166.0	12.0	172.3	9.7	1643.0	11.0
13	1055.0	10.0	1060.4	6.0	0.5	1042.0	15.0	97.6	7.2	76.7	6.4	1076.0	13.0
14	1066.0	11.0	1073.2	6.8	0.7	1096.0	14.0	93.2	9.9	117.0	9.8	1094.0	13.0
15	1376.0	10.0	1407.2	7.8	2.3	1368.0	14.0	100.9	7.3	148.0	10.0	1450.2	9.6
16	1400.8	9.4	1420.1	5.7	1.4	1439.0	11.0	127.4	7.7	186.3	6.5	1444.1	9.4
17	1039.9	9.0	1051.5	8.7	1.1	1060.0	22.0	96.0	13.0	77.0	12.0	1074.0	17.0
18	1062.6	7.9	1079.9	6.5	1.6	1068.0	14.0	98.7	4.2	73.9	2.4	1114.2	9.4
19*	873.0	22.0	1566.0	61.0	79.4	1478.0	58.0	48.0	3.9	71.6	7.9	2690.0	110.0
20	1268.2	9.9	1293.3	7.5	2.0	1290.0	19.0	54.6	5.2	47.0	5.2	1337.0	10.0
Resting Spring Range													
MG11RS1 (N=28)													
01	1384.0	18.0	1412.0	10.0	2.0	1399.0	17.0	79.4	7.3	146.0	14.0	1445.0	14.0
02	1152.8	9.1	1163.9	6.3	1.0	1185.0	12.0	125.6	6.5	106.9	2.4	1194.2	9.8
03	1726.0	15.0	1757.3	7.0	1.8	1731.0	16.0	81.3	4.6	125.4	5.7	1794.9	9.5
04	1756.0	20.0	1782.1	9.4	1.5	1671.0	45.0	75.1	5.4	46.8	3.9	1816.8	7.9
05	1452.0	16.0	1448.0	10.0	0.3	1478.0	30.0	54.7	9.9	31.5	5.0	1436.0	13.0
06	1690.0	17.0	1726.0	9.9	2.1	1716.0	24.0	45.0	3.3	47.3	3.0	1782.0	10.0
08	1633.0	13.0	1691.8	7.1	3.6	1708.0	19.0	108.3	5.6	107.3	4.0	1770.2	8.1
09	1734.0	16.0	1750.4	6.7	0.9	1726.0	15.0	117.4	7.6	234.8	9.4	1780.6	9.5
10	1837.0	16.0	1838.9	7.9	0.1	1796.0	29.0	129.2	5.4	32.4	1.0	1845.0	7.0
11	1652.0	13.0	1671.1	6.3	1.2	1606.0	21.0	168.8	9.2	93.2	3.8	1693.1	6.7

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
12	2783.0	18.0	2866.9	7.0	3.0	2819.0	35.0	109.9	6.8	42.5	2.4	2936.2	4.7
13	1323.1	9.2	1319.6	7.1	0.3	1340.0	16.0	98.1	8.9	66.7	4.0	1324.0	10.0
14	2033.0	18.0	2046.0	11.0	0.6	2055.0	22.0	45.2	2.1	63.1	1.7	2067.0	14.0
15	1645.0	13.0	1667.9	5.8	1.4	1694.0	25.0	95.0	3.4	44.7	1.6	1694.7	7.0
16	1364.0	11.0	1392.0	10.0	2.1	1423.0	33.0	29.8	2.5	20.6	1.6	1442.0	16.0
17	1620.0	21.0	1701.0	11.0	5.0	1384.0	43.0	303.0	21.0	160.0	14.0	1805.0	11.0
18	1675.0	16.0	1702.0	11.0	1.6	1765.0	17.0	69.2	2.7	134.2	8.5	1735.0	10.0
19	1722.0	11.0	1748.3	6.2	1.5	1761.0	28.0	217.0	19.0	28.2	1.2	1792.1	9.3
20	1034.5	9.2	1034.7	5.7	0.0	1021.0	12.0	160.0	20.0	89.4	9.9	1032.0	12.0
21	2629.0	22.0	2675.9	7.3	1.8	2678.0	49.0	74.0	13.0	49.6	3.5	2714.0	6.2
22	1623.0	16.0	1661.7	7.7	2.4	1674.0	19.0	265.0	22.0	74.9	3.2	1717.1	6.9
23	2958.0	24.0	3072.7	9.5	3.9	3031.0	63.0	35.7	2.8	41.7	4.6	3146.5	7.3
24	1792.0	15.0	1778.3	6.9	0.8	1779.0	23.0	79.0	13.0	101.0	10.0	1778.9	8.8
25	1654.0	11.0	1653.9	7.2	0.0	1705.0	17.0	102.1	8.5	104.3	4.4	1662.6	9.1
26	1628.0	15.0	1652.4	7.3	1.5	1618.0	16.0	162.0	8.9	117.4	4.9	1681.8	8.6
28	1729.0	14.0	1751.2	6.1	1.3	1758.0	16.0	157.7	6.1	98.1	1.7	1783.6	8.2
29	1770.0	18.0	1777.4	7.8	0.4	1821.0	36.0	236.0	18.0	45.4	2.9	1784.8	7.3
30	1671.0	13.0	1722.7	6.3	3.1	1432.0	63.0	295.0	15.0	68.3	6.1	1788.7	6.4
MG11RS2 (N=20)													
01	1150.0	12.0	1178.7	9.2	2.5	1186.0	15.0	30.0	3.9	61.2	6.3	1232.0	14.0
02	1274.0	11.0	1326.8	8.0	4.1	1384.0	22.0	51.5	4.8	27.7	3.3	1422.0	11.0
04	1062.3	9.7	1096.8	7.5	3.2	1174.0	17.0	45.0	3.7	53.5	4.1	1184.0	12.0
05	1358.0	11.0	1399.3	6.6	3.0	1374.0	16.0	120.2	8.8	114.9	9.7	1467.0	9.0
06	1024.9	7.8	1023.5	5.5	0.1	1026.9	9.6	227.0	11.0	159.5	6.6	1024.9	9.2
07	1388.0	10.0	1410.7	7.0	1.6	1456.0	16.0	129.3	8.4	90.0	4.0	1444.3	9.4
08	1041.0	13.0	1047.0	11.0	0.6	1062.0	24.0	22.1	0.9	16.8	0.8	1094.0	18.0
09	1646.0	14.0	1692.0	6.3	2.8	1657.0	17.0	181.0	15.0	217.0	15.0	1753.5	7.7
10	1537.0	16.0	1585.8	7.6	3.2	1580.0	20.0	73.0	3.7	128.2	8.2	1657.0	9.6
11	1019.9	9.0	1046.8	7.1	2.6	1054.0	12.0	66.4	1.1	85.2	3.4	1095.0	15.0
12	1610.0	14.0	1665.6	7.0	3.5	1630.0	20.0	340.0	21.0	630.0	35.0	1740.2	6.5
13	1689.0	12.0	1714.9	6.0	1.5	1700.0	12.0	238.0	19.0	274.0	23.0	1747.6	6.8
14	950.3	8.4	961.2	6.3	1.1	978.0	11.0	132.0	16.0	93.6	5.1	989.0	12.0
15	1637.0	14.0	1698.1	6.5	3.7	1276.0	37.0	151.0	7.8	57.2	1.4	1778.6	7.6
16	1635.0	11.0	1680.3	6.8	2.8	1684.0	18.0	134.0	6.6	46.2	1.5	1740.9	7.2
17	966.0	11.0	981.9	7.5	1.6	1012.0	13.0	83.0	5.6	57.4	3.4	1009.0	14.0
18	1363.0	12.0	1396.7	7.5	2.5	1491.0	17.0	98.1	7.9	105.8	7.8	1452.4	9.6
19	1131.5	8.4	1143.6	6.0	1.1	1120.0	11.0	170.0	14.0	170.0	11.0	1170.6	9.2
20	1395.0	12.0	1419.9	6.6	1.8	1437.0	20.0	99.0	14.0	72.0	12.0	1453.0	10.0
21	1647.0	15.0	1685.7	7.0	2.3	1780.0	21.0	183.0	15.0	65.9	1.9	1732.5	8.9

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
MG11RS3 (N=30)													
01	1363.0	20.0	1529.0	12.0	12.2	1271.0	26.0	74.6	3.1	120.5	4.2	1771.6	9.8
02	1000.4	8.6	1041.6	6.8	4.1	1049.0	16.0	132.0	15.0	81.0	11.0	1114.0	11.0
03	1682.0	14.0	1728.1	6.2	2.7	1759.0	15.0	187.0	12.0	292.0	24.0	1787.1	8.8
04	1649.0	14.0	1717.4	7.9	4.1	1680.0	18.0	189.0	18.0	112.8	7.4	1794.0	10.0
05	1355.0	10.0	1388.2	5.5	2.5	1341.0	15.0	111.4	7.5	109.6	4.6	1433.9	9.6
06	1782.0	15.0	1778.5	6.8	0.2	1719.0	22.0	192.0	16.0	69.8	2.4	1779.1	7.3
07	1697.0	12.0	1738.3	5.9	2.4	1711.0	26.0	237.0	20.0	54.1	6.4	1793.3	6.1
08	2332.0	30.0	2410.0	12.0	3.3	2423.0	50.0	25.1	0.9	31.3	0.7	2468.0	18.0
09	970.5	9.0	997.4	6.0	2.8	981.0	11.0	150.6	9.8	78.6	7.2	1052.0	10.0
10	1053.2	9.9	1062.7	7.8	0.9	1069.0	17.0	62.4	8.3	50.9	6.4	1090.0	13.0
11	1146.9	9.5	1155.8	8.1	0.8	1140.0	16.0	48.7	2.6	37.7	0.9	1174.0	15.0
12	1018.0	11.0	1058.0	9.3	3.9	1038.0	16.0	49.1	2.1	42.6	1.6	1133.0	15.0
13	1703.0	13.0	1727.8	7.1	1.5	1710.0	15.0	99.2	5.8	236.0	16.0	1767.8	8.9
14	1806.0	12.0	1859.2	6.6	2.9	1851.0	17.0	86.1	8.1	134.7	7.4	1920.5	6.8
15	1556.0	12.0	1623.6	8.1	4.3	1505.0	30.0	202.0	10.0	91.5	3.7	1713.7	7.7
16	1537.0	18.0	1610.0	10.0	4.7	1317.0	27.0	215.0	21.0	94.3	3.7	1709.3	6.6
17	1700.0	11.0	1732.0	5.6	1.9	1663.0	15.0	196.0	18.0	165.4	7.6	1775.3	7.0
18	1108.0	15.0	1127.8	9.1	1.8	1138.0	25.0	25.4	0.9	16.5	0.4	1180.0	15.0
19	2440.0	17.0	2538.5	6.4	4.0	2375.0	33.0	147.0	10.0	167.0	13.0	2615.9	5.8
20	1767.0	15.0	1775.6	8.8	0.5	1770.0	22.0	190.0	11.0	143.6	5.6	1776.7	6.9
21	1696.0	14.0	1742.7	6.9	2.8	1703.0	16.0	126.6	7.3	202.8	6.6	1798.9	8.6
22	1398.0	14.0	1420.8	7.0	1.6	1362.0	23.0	137.1	5.9	144.6	6.3	1448.8	8.9
23	1085.0	12.0	1132.7	5.6	4.4	1023.0	28.0	239.4	9.9	126.9	5.8	1220.0	15.0
24	1365.0	13.0	1394.7	6.8	2.2	1419.0	17.0	171.5	9.6	117.4	7.2	1428.5	8.6
25	1354.0	11.0	1381.3	6.4	2.0	1361.0	12.0	80.3	5.9	107.4	7.3	1418.6	9.3
26	1855.0	15.0	1890.4	8.8	1.9	1853.0	19.0	46.1	4.2	112.4	9.3	1926.8	9.8
27	1693.0	13.0	1732.0	6.8	2.3	1585.0	26.0	398.0	17.0	183.8	4.9	1781.9	7.7
28	1675.0	12.0	1723.0	6.4	2.9	1703.0	15.0	105.1	2.0	171.1	5.3	1771.6	7.8
29	1763.0	21.0	1773.8	9.3	0.6	1817.0	15.0	201.0	21.0	123.5	6.4	1793.0	13.0
30	1340.0	23.0	1367.0	15.0	2.0	1282.0	18.0	122.0	26.0	106.3	8.7	1420.0	12.0
MG11RS4 (N=30)													
01	966.0	13.0	1005.5	8.8	4.1	1051.0	17.0	98.0	18.0	76.0	11.0	1097.0	15.0
02	981.0	12.0	1001.0	11.0	2.0	1002.0	18.0	24.3	3.5	36.1	2.1	1052.0	15.0
03	1284.0	11.0	1305.3	8.0	1.7	1294.0	20.0	26.6	1.0	33.1	1.6	1349.0	13.0
04	1053.0	11.0	1059.9	8.2	0.7	1046.0	18.0	108.0	24.0	83.0	15.0	1073.0	13.0
05	1028.7	8.2	1049.7	6.9	2.0	1050.0	12.0	192.0	16.0	154.0	13.0	1095.3	9.4
06	1074.5	8.0	1088.3	5.5	1.3	1085.0	11.0	250.0	29.0	72.1	2.3	1110.2	9.1
07	999.9	8.5	1013.1	5.7	1.3	1023.0	18.0	97.2	4.4	48.2	2.8	1051.0	11.0
08	1183.0	11.0	1194.6	8.6	1.0	1192.0	15.0	49.0	4.0	73.7	4.8	1220.0	15.0

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
09	1062.2	7.8	1064.1	6.2	0.2	1071.0	15.0	105.6	7.8	86.3	6.3	1079.0	11.0
10	1064.2	8.1	1073.6	5.6	0.9	1083.0	15.0	111.0	3.8	69.4	1.7	1099.0	12.0
11	1052.0	11.0	1070.6	7.5	1.8	1063.0	23.0	127.0	13.0	121.0	13.0	1106.0	10.0
12	1019.0	11.0	1038.0	7.4	1.9	1015.0	18.0	54.0	2.5	52.0	2.0	1093.0	16.0
13	1109.0	15.0	1099.0	11.0	0.9	1130.0	28.0	45.5	4.5	44.9	6.8	1088.0	17.0
14	1041.8	8.0	1055.8	7.5	1.3	1081.0	19.0	54.2	2.1	40.0	2.2	1083.0	15.0
15	1037.0	12.0	1047.1	8.8	1.0	1074.0	22.0	43.5	8.3	34.3	2.3	1079.0	13.0
16	1030.0	14.0	1060.0	12.0	2.9	1102.0	28.0	29.1	4.8	19.5	2.5	1100.0	18.0
17	1051.0	10.0	1066.2	6.5	1.4	1077.0	11.0	81.5	7.5	143.0	10.0	1101.0	13.0
18	1003.2	9.4	1029.2	7.7	2.6	1028.0	16.0	79.3	9.1	70.7	4.8	1084.0	12.0
19	1036.0	11.0	1038.5	7.4	0.2	1038.0	12.0	133.8	9.8	137.0	11.0	1055.0	10.0
20	1043.0	13.0	1078.0	13.0	3.4	1160.0	31.0	18.9	0.8	11.9	0.5	1140.0	22.0
21	962.0	16.0	986.0	13.0	2.5	1088.0	31.0	22.7	0.6	19.1	0.9	1074.0	20.0
22	1071.0	16.0	1068.0	11.0	0.3	1109.0	29.0	77.0	17.0	59.0	12.0	1070.0	22.0
23	1086.6	9.1	1086.8	5.8	0.0	1088.0	15.0	180.0	22.0	122.0	13.0	1092.0	12.0
24	1041.0	11.0	1043.3	6.7	0.2	1070.0	18.0	74.9	3.3	55.3	2.5	1054.0	16.0
25	1038.0	10.0	1052.3	6.5	1.4	1066.0	15.0	124.0	18.0	86.8	9.8	1096.0	12.0
26	1072.1	9.4	1085.3	7.6	1.2	1092.0	16.0	73.3	5.0	72.1	3.4	1095.0	13.0
27	1034.1	9.8	1051.6	8.3	1.7	1126.0	22.0	41.1	3.0	26.0	1.6	1074.0	16.0
28	1050.0	13.0	1085.0	12.0	3.3	1129.0	34.0	14.3	1.1	11.5	0.8	1157.0	23.0
29	1005.0	9.9	1028.3	8.9	2.3	1056.0	17.0	69.1	5.0	43.8	2.3	1064.0	15.0
30	1042.9	9.6	1056.2	6.1	1.3	1043.0	12.0	126.2	8.9	77.3	2.5	1083.0	9.9
MG11RS5 (N=28)													
01	1733.0	12.0	1720.0	5.8	0.8	1739.0	25.0	76.0	6.4	49.8	2.9	1712.0	7.4
02	1054.0	14.0	1076.0	15.0	2.1	1059.0	33.0	11.6	1.3	10.1	0.7	1131.0	24.0
03	1468.0	13.0	1454.1	6.7	0.9	1431.0	15.0	165.7	4.8	85.2	2.2	1435.7	8.5
04	1097.0	12.0	1117.2	9.8	1.8	1122.0	16.0	35.8	1.4	32.0	1.3	1144.0	17.0
05	1464.0	12.0	1461.9	7.1	0.1	1430.0	14.0	203.0	21.0	270.0	26.0	1463.6	7.3
06	1663.0	15.0	1665.7	7.4	0.2	1646.0	25.0	41.4	4.0	26.7	2.4	1682.0	9.9
07	1445.0	15.0	1444.5	7.4	0.0	1436.0	15.0	103.7	6.6	159.0	11.0	1437.0	12.0
08	1643.0	15.0	1672.0	8.3	1.8	1642.0	21.0	60.1	1.8	69.1	3.4	1715.0	15.0
09	1420.0	10.0	1426.5	6.7	0.5	1381.0	15.0	83.1	4.0	74.5	3.4	1442.9	7.4
10	1103.0	15.0	1104.0	8.3	0.1	1071.0	12.0	125.0	24.0	123.0	19.0	1123.0	12.0
11	524.0	5.6	528.0	4.8	0.8	530.7	5.0	170.0	5.9	323.0	17.0	544.0	15.0
12	1335.0	17.0	1352.1	9.2	1.3	1317.0	17.0	132.0	13.0	70.6	5.5	1386.3	8.2
13	1379.0	17.0	1391.4	9.1	0.9	1385.0	26.0	48.1	3.1	35.8	2.8	1418.0	16.0
14	2722.0	29.0	2712.0	12.0	0.4	2758.0	35.0	25.7	2.4	30.0	3.0	2695.2	8.0
15	1217.0	15.0	1223.7	9.0	0.6	1201.0	18.0	40.4	2.3	40.0	2.5	1246.0	18.0
16	1394.0	12.0	1407.4	6.5	1.0	1337.0	23.0	64.9	4.1	32.5	2.7	1438.0	17.0
17	1713.0	25.0	1698.0	12.0	0.9	1665.0	45.0	39.5	1.7	25.6	0.6	1698.0	19.0

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
18	1730.0	21.0	1752.0	10.0	1.3	1751.0	22.0	77.0	11.0	100.0	11.0	1784.0	9.9
19	1649.0	14.0	1651.5	7.2	0.2	1597.0	19.0	94.2	6.9	61.2	1.9	1655.0	8.6
20	1425.0	15.0	1422.4	7.4	0.2	1598.0	25.0	117.1	7.0	75.7	2.6	1428.0	10.0
22	1163.0	11.0	1208.1	8.6	3.9	1194.0	10.0	72.1	4.0	146.3	4.0	1298.0	20.0
23	1360.0	31.0	1370.0	22.0	0.7	1406.0	44.0	23.0	0.9	41.2	2.1	1399.0	26.0
24	1614.0	18.0	1642.9	8.7	1.8	1581.0	21.0	38.8	1.0	51.6	0.9	1668.0	15.0
25	1320.0	16.0	1343.9	8.9	1.8	1503.0	25.0	55.6	7.2	51.0	4.8	1373.0	12.0
26	1551.0	16.0	1611.5	7.8	3.9	1150.0	34.0	133.0	5.3	77.6	2.1	1688.5	8.0
27	1019.0	15.0	1046.2	9.9	2.7	1032.0	19.0	95.0	3.4	62.2	1.3	1101.0	14.0
28	1604.0	16.0	1632.9	8.2	1.8	990.0	38.0	148.0	21.0	128.4	8.1	1665.0	10.0
29	1430.0	12.0	1433.3	8.0	0.2	1375.0	17.0	71.2	8.1	72.5	7.0	1440.3	9.4
MG11RS6 (N=29)													
01	1718.0	17.0	1722.5	9.2	0.3	1592.0	38.0	32.9	1.3	13.0	0.4	1738.0	13.0
02	1438.0	11.0	1429.2	5.5	0.6	1328.0	22.0	145.0	12.0	75.4	6.7	1423.4	8.7
03	1363.0	14.0	1392.6	7.2	2.2	1285.0	14.0	377.0	9.1	166.0	5.2	1431.1	6.5
04*	1416.0	40.0	2061.0	25.0	45.6	2005.0	34.0	1153.0	41.0	319.1	8.5	2802.7	7.3
05	2636.0	25.0	2662.0	11.0	1.0	2475.0	66.0	11.7	0.6	5.5	0.2	2693.0	14.0
06	1661.0	14.0	1675.6	6.0	0.9	1577.0	20.0	265.0	15.0	136.6	8.3	1694.5	8.2
07	1495.0	18.0	1471.7	8.7	1.6	1384.0	22.0	128.0	12.0	69.5	5.0	1443.0	12.0
08	1698.0	16.0	1703.5	8.8	0.3	1592.0	18.0	84.1	9.3	79.9	4.7	1701.5	9.6
09	1442.0	12.0	1434.6	7.6	0.5	1420.0	23.0	97.0	17.0	53.9	9.5	1430.0	10.0
10	1452.0	12.0	1459.8	7.4	0.5	1385.0	14.0	131.0	3.4	93.8	1.5	1463.7	7.6
11	1782.0	12.0	1794.6	5.3	0.7	1645.0	21.0	313.0	13.0	256.0	11.0	1808.9	5.0
12	1895.0	23.0	1870.8	8.7	1.3	1788.0	47.0	26.1	2.2	9.9	0.9	1847.0	13.0
13	1437.0	12.0	1440.9	5.5	0.3	1370.0	16.0	123.2	7.7	81.5	5.7	1437.1	9.1
14	1422.0	11.0	1428.2	5.4	0.4	1343.0	17.0	108.4	6.3	121.9	7.8	1441.5	8.7
15	1264.0	13.0	1270.8	7.4	0.5	1207.0	13.0	54.3	1.4	86.6	1.8	1277.0	13.0
16	1692.0	17.0	1692.1	9.6	0.0	1612.0	22.0	45.6	2.3	38.7	1.5	1706.0	12.0
17	1139.0	9.2	1136.9	6.4	0.2	1090.0	11.0	251.0	12.0	285.0	16.0	1141.4	8.8
18	1736.0	12.0	1720.9	6.2	0.9	1665.0	22.0	89.0	5.8	64.0	5.4	1704.2	7.8
19	1777.0	13.0	1760.7	7.4	0.9	1684.0	25.0	200.3	9.1	45.5	3.0	1746.0	10.0
20	1092.8	8.0	1106.9	4.6	1.3	1046.5	9.1	202.7	5.8	169.7	2.1	1129.7	6.9
21	2718.0	21.0	2694.3	9.0	0.9	2616.0	27.0	75.0	4.8	79.4	3.5	2672.7	9.1
22	1463.0	12.0	1453.1	7.5	0.7	1405.0	20.0	94.8	9.7	109.0	14.0	1446.0	13.0
23	1786.0	14.0	1791.5	6.1	0.3	1643.0	19.0	322.0	15.0	163.5	7.1	1802.4	6.9
24	1430.0	12.0	1437.2	7.2	0.5	1475.0	20.0	73.8	3.6	61.6	5.4	1444.0	11.0
25	1802.0	13.0	1793.7	6.7	0.5	1707.0	14.0	185.4	9.5	151.5	8.1	1783.5	5.9
26	1456.0	12.0	1451.8	7.3	0.3	1443.0	14.0	105.3	6.5	127.5	7.3	1440.4	9.4
27	1734.0	10.0	1735.3	6.4	0.1	1677.0	21.0	114.9	5.7	51.3	2.1	1740.4	9.8
28	1717.0	10.0	1707.3	5.6	0.6	1725.0	16.0	166.5	7.7	64.0	3.3	1691.9	5.6

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
29	1387.0	10.0	1379.5	5.3	0.5	1311.0	17.0	82.0	7.5	55.7	5.7	1377.0	8.5
30	1206.5	9.4	1191.9	4.6	1.2	1158.0	11.0	227.7	8.6	110.3	2.3	1170.0	10.0
Northwest Spring Mountains													
MG12SM21 (N=30)													
01	1839.0	13.0	1844.5	7.1	0.3	1810.0	18.0	69.4	2.9	92.9	2.6	1831.2	8.4
02	2736.0	22.0	2739.8	7.5	0.1	2718.0	29.0	46.8	4.3	50.3	3.2	2740.8	7.1
03	2660.0	17.0	2678.6	6.1	0.7	2717.0	25.0	55.5	2.6	74.5	4.0	2694.8	5.9
04	1834.0	17.0	1870.1	8.9	2.0	1939.0	27.0	43.0	2.6	73.3	4.5	1912.0	12.0
05	1829.0	17.0	1834.6	8.3	0.3	1794.0	18.0	68.6	5.0	73.8	3.5	1850.0	11.0
06	1814.0	16.0	1839.8	7.8	1.4	1829.0	20.0	49.2	1.6	65.1	2.3	1870.0	9.0
07	1788.0	16.0	1815.3	8.5	1.5	1812.0	17.0	101.9	9.6	154.0	10.0	1861.0	8.0
08	2022.0	16.0	2051.8	7.1	1.5	2032.0	15.0	113.0	12.0	92.5	7.8	2077.6	6.3
09	2544.0	18.0	2645.3	7.6	4.0	2617.0	26.0	54.8	5.7	85.4	7.9	2725.8	7.1
10	1816.0	17.0	1844.8	7.7	1.6	1822.0	20.0	49.7	5.3	80.4	7.5	1882.7	9.2
11	1989.0	18.0	2054.1	8.7	3.3	2113.0	24.0	83.0	17.0	71.0	12.0	2119.4	7.6
12	1789.0	16.0	1815.9	8.1	1.5	1800.0	20.0	59.1	2.2	76.6	1.3	1842.4	9.6
13	1871.0	14.0	1853.3	6.6	0.9	1784.0	16.0	118.0	19.0	147.0	17.0	1832.2	6.8
14	2054.0	14.0	2065.2	6.3	0.5	2046.0	21.0	46.5	2.7	128.3	6.6	2065.9	9.3
15	1837.0	15.0	1845.5	8.0	0.5	1788.0	26.0	58.0	3.6	60.6	3.2	1863.0	11.0
16	1795.0	23.0	1853.0	11.0	3.2	1848.0	21.0	27.8	0.6	79.9	5.1	1928.0	13.0
17	1765.0	12.0	1815.8	6.2	2.9	1855.0	19.0	193.4	8.5	131.2	4.0	1869.7	9.5
18	1923.0	20.0	2003.0	11.0	4.2	1987.0	26.0	23.0	1.7	37.9	0.5	2082.0	14.0
19	1849.0	15.0	1839.3	7.4	0.5	1864.0	21.0	63.5	9.8	75.0	12.0	1830.1	7.7
20	2061.0	15.0	2072.6	6.4	0.6	2025.0	17.0	135.2	6.3	158.3	6.3	2084.9	6.4
21	1743.0	16.0	1788.6	7.7	2.6	1885.0	20.0	43.7	2.0	68.0	3.5	1846.0	13.0
22	2784.0	18.0	2821.9	5.2	1.4	2910.0	31.0	44.8	2.6	56.9	3.0	2850.6	8.3
23	2102.0	15.0	2091.7	7.5	0.5	2083.0	16.0	127.0	14.0	203.0	22.0	2086.5	8.6
24	1851.0	19.0	1871.0	10.0	1.1	1864.0	31.0	118.0	23.0	84.4	7.7	1899.9	9.5
25	2059.0	14.0	2059.9	7.9	0.0	2048.0	28.0	48.2	4.7	39.2	2.5	2063.9	8.5
26	1912.0	16.0	1912.2	6.7	0.0	1912.0	25.0	52.1	3.1	74.1	2.5	1916.9	9.1
27	1766.0	16.0	1846.6	9.4	4.6	2150.0	41.0	50.0	5.7	59.8	2.5	1945.0	14.0
28	1826.0	13.0	1851.1	6.0	1.4	2043.0	45.0	67.1	4.2	19.1	0.9	1881.4	8.9
29	1764.0	19.0	1840.0	11.0	4.3	1955.0	25.0	21.5	0.4	45.3	1.2	1925.0	11.0
30	1805.0	13.0	1803.3	7.2	0.1	1801.0	19.0	72.4	9.9	96.1	9.4	1810.7	7.7
MG12SM22 (N=30)													
01	1425.0	14.0	1423.4	8.1	0.1	1506.0	17.0	108.5	4.0	131.8	4.1	1429.2	8.6
02	1718.0	13.0	1710.8	6.9	0.4	1702.0	22.0	182.0	12.0	102.7	6.0	1709.7	8.7
03	1410.0	10.0	1417.4	6.6	0.5	1396.0	25.0	89.5	6.5	31.3	0.7	1442.2	7.2
04	1421.2	9.5	1422.5	6.1	0.1	1492.0	20.0	133.0	11.0	61.7	5.1	1434.8	8.1
05	1670.0	13.0	1690.3	8.1	1.2	1701.0	21.0	123.0	25.0	51.7	4.9	1727.1	6.5

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
06	1346.0	12.0	1349.0	8.8	0.2	1371.0	16.0	61.3	3.3	101.5	5.4	1376.0	13.0
07	1421.0	11.0	1426.3	6.0	0.4	1432.0	16.0	140.0	7.0	65.3	2.6	1440.1	5.4
08	1649.0	18.0	1671.0	11.0	1.3	1676.0	30.0	89.2	7.4	63.7	5.9	1701.5	8.8
09	1399.0	11.0	1422.7	6.4	1.7	1411.0	15.0	120.0	6.5	71.5	2.7	1450.7	8.5
10	1366.0	11.0	1361.5	6.9	0.3	1346.0	16.0	140.0	13.0	151.0	13.0	1366.1	8.9
11	1337.0	11.0	1354.3	7.6	1.3	1363.0	21.0	75.2	4.9	51.1	2.9	1379.0	10.0
12	1416.0	13.0	1428.3	7.6	0.9	1429.0	19.0	63.1	3.8	66.9	3.1	1448.0	10.0
13	1376.0	13.0	1405.8	9.4	2.2	1489.0	22.0	85.7	6.5	46.5	2.8	1453.0	11.0
14	1593.0	13.0	1636.7	7.1	2.7	1679.0	31.0	62.2	3.8	32.4	2.5	1690.4	9.3
15	1351.0	12.0	1353.6	7.1	0.2	1394.0	20.0	57.3	1.4	72.7	2.2	1370.0	13.0
16	1500.0	14.0	1511.1	7.8	0.7	1467.0	18.0	446.0	12.0	411.1	6.7	1535.9	6.2
17	1339.8	9.6	1356.9	6.0	1.3	1305.0	15.0	146.5	9.6	143.6	7.5	1385.0	11.0
18	1381.0	17.0	1418.4	8.2	2.7	1442.0	21.0	62.0	4.2	55.4	3.7	1481.0	15.0
19	1644.0	19.0	1680.1	9.2	2.2	1820.0	40.0	46.0	1.4	23.1	0.6	1718.0	13.0
20	1671.0	13.0	1685.6	6.5	0.9	1643.0	31.0	64.7	5.1	33.7	3.1	1709.0	8.2
21	1344.9	9.6	1364.7	7.2	1.5	1356.0	17.0	73.8	4.8	78.4	3.9	1389.0	11.0
22	1320.0	14.0	1335.3	6.9	1.2	1290.0	17.0	132.0	27.0	127.0	24.0	1366.0	11.0
23	1331.0	10.0	1337.7	7.0	0.5	1376.0	21.0	54.8	2.3	31.9	1.0	1353.4	7.9
24	1382.0	11.0	1401.1	6.6	1.4	1411.0	20.0	53.2	4.7	94.8	8.0	1441.0	13.0
25	1685.0	19.0	1700.1	8.3	0.9	1609.0	19.0	181.0	18.0	111.2	7.1	1722.3	8.2
26	1318.0	12.0	1330.2	7.7	0.9	1368.0	23.0	89.4	7.3	39.3	0.8	1357.0	11.0
27	1323.9	8.6	1348.9	5.8	1.9	1335.0	18.0	107.3	4.5	90.2	4.5	1381.4	9.9
28	1115.2	8.6	1154.0	17.0	3.5	1151.0	22.0	97.6	6.9	72.7	2.7	1242.0	41.0
29	1402.0	15.0	1423.5	7.8	1.5	1415.0	12.0	268.0	26.0	374.0	35.0	1459.9	8.3
30	1082.0	20.0	1113.0	13.0	2.9	1144.0	28.0	43.7	1.9	19.2	0.8	1192.0	23.0
MG12SM23 (N=30)													
01	2524.0	21.0	2604.8	9.1	3.2	2744.0	34.0	47.0	3.3	85.3	6.6	2654.7	7.9
02	1798.0	13.0	1825.3	7.0	1.5	1638.0	34.0	71.3	5.9	22.7	1.2	1856.7	8.4
03	1784.0	11.0	1810.1	5.6	1.5	1747.0	17.0	127.8	7.4	135.0	3.5	1849.3	6.0
04	1773.0	15.0	1805.8	7.0	1.8	1750.0	15.0	187.0	18.0	180.0	15.0	1844.0	8.5
05	1993.0	16.0	2033.4	7.5	2.0	1973.0	25.0	84.6	4.8	72.2	2.1	2068.6	6.8
06	2026.0	14.0	2046.6	7.1	1.0	1973.0	28.0	56.5	2.2	57.5	1.5	2072.4	7.4
07	1797.0	13.0	1809.4	7.7	0.7	1788.0	18.0	59.9	8.8	99.7	8.4	1838.9	7.5
08	2779.0	22.0	2808.8	7.3	1.1	2818.0	45.0	44.5	1.8	76.4	5.5	2835.4	7.7
09	1895.0	19.0	1905.0	10.0	0.5	1857.0	24.0	169.0	23.0	98.1	9.0	1927.1	8.5
10	2527.0	15.0	2542.8	7.8	0.6	2461.0	21.0	114.7	2.9	68.3	1.3	2558.6	6.5
11	2035.0	14.0	2047.6	6.3	0.6	2006.0	22.0	78.4	4.5	86.2	4.8	2071.0	6.9
12	1811.0	15.0	1832.4	9.8	1.2	1794.0	26.0	95.2	9.5	97.1	8.8	1871.0	20.0
13	1842.0	16.0	1864.3	6.1	1.2	1813.0	24.0	88.2	3.7	84.5	3.7	1897.4	9.6
14	2262.0	14.0	2293.0	5.6	1.4	2244.0	23.0	129.1	7.0	161.3	6.9	2317.5	6.1

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
15	1874.0	17.0	1894.0	9.3	1.1	1902.0	22.0	40.4	1.6	79.5	2.2	1916.2	9.4
16	1798.0	15.0	1828.3	9.7	1.7	1759.0	22.0	39.2	4.4	124.0	14.0	1861.0	11.0
17	1854.0	21.0	1883.5	9.5	1.6	1843.0	25.0	46.4	4.6	76.2	7.3	1911.0	15.0
18	1865.0	16.0	1894.5	7.6	1.6	1850.0	21.0	47.2	4.3	71.3	3.0	1916.0	12.0
19	1834.0	18.0	1843.0	10.0	0.5	1820.0	27.0	80.0	12.0	121.0	12.0	1860.0	10.0
20	1848.0	13.0	1894.4	7.0	2.5	1839.0	18.0	55.1	3.1	98.9	4.0	1931.1	9.1
21	1798.0	20.0	1806.0	11.0	0.4	1788.0	29.0	73.0	9.2	76.5	9.5	1818.0	11.0
22	1858.0	13.0	1889.7	5.2	1.7	1820.0	17.0	115.1	7.9	147.8	5.9	1922.3	7.3
23	1793.0	18.0	1813.6	8.7	1.1	1817.0	30.0	69.4	9.2	43.8	4.0	1839.5	9.3
24	2031.0	21.0	2056.0	10.0	1.2	2014.0	28.0	39.4	1.8	49.5	2.3	2075.0	13.0
25	2058.0	19.0	2061.0	11.0	0.1	2041.0	31.0	112.0	22.0	56.3	4.2	2057.7	8.3
26	2639.0	19.0	2663.2	6.9	0.9	2608.0	22.0	93.6	3.7	105.4	1.8	2680.0	8.0
27	2375.0	17.0	2384.1	7.6	0.4	2336.0	22.0	193.0	13.0	161.0	13.0	2386.9	7.0
28	986.5	7.7	1000.6	6.7	1.4	989.9	9.0	77.8	2.7	117.2	3.0	1045.0	11.0
29	1845.0	13.0	1835.6	7.0	0.5	1902.0	19.0	47.2	3.0	69.1	3.0	1817.8	8.4
30	1807.0	16.0	1816.0	8.0	0.5	1801.0	22.0	53.4	6.0	59.2	5.2	1833.8	8.7
MG12SM24 (N=30)													
01	1066.5	7.4	1072.2	4.9	0.5	1061.0	12.0	167.0	11.0	153.0	12.0	1084.2	9.6
02	1296.0	14.0	1324.6	7.6	2.2	1304.0	17.0	156.7	9.7	128.7	8.5	1366.1	9.4
03	1622.0	11.0	1651.6	6.4	1.8	1635.0	16.0	173.0	17.0	189.0	14.0	1688.4	8.3
04	1093.0	9.4	1110.5	6.9	1.6	1081.0	22.0	93.0	13.0	39.7	5.8	1139.0	12.0
05	1432.0	12.0	1433.1	5.6	0.1	1416.0	19.0	171.1	7.5	74.5	2.8	1433.9	8.4
06	1389.0	15.0	1410.3	9.6	1.5	1395.0	32.0	42.8	9.2	20.7	4.1	1438.0	15.0
07	1400.0	13.0	1412.3	7.6	0.9	1371.0	18.0	123.1	8.9	148.0	16.0	1431.0	10.0
08	1425.0	11.0	1435.6	6.3	0.7	1415.0	15.0	113.8	7.1	120.5	5.8	1463.0	10.0
09	1052.2	9.6	1068.2	6.8	1.5	1063.0	16.0	108.0	16.0	111.0	15.0	1110.0	13.0
10	1332.5	9.8	1347.7	6.2	1.1	1329.0	15.0	93.1	7.6	112.4	8.4	1380.4	9.7
11	1325.0	11.0	1345.2	5.3	1.5	1339.0	17.0	121.8	7.9	108.8	5.8	1377.8	9.7
12	1067.1	9.2	1078.8	7.0	1.1	1069.0	13.0	68.6	2.1	65.3	1.2	1111.0	11.0
13	1663.0	14.0	1678.0	8.8	0.9	1707.0	34.0	54.0	5.7	24.7	2.1	1696.2	9.9
14	1407.0	10.0	1417.6	6.2	0.8	1416.0	15.0	118.2	2.8	117.5	1.9	1442.4	9.0
15	1335.6	8.4	1348.1	4.7	0.9	1340.0	19.0	144.0	14.0	114.0	11.0	1367.9	7.7
16	1392.0	10.0	1410.2	6.3	1.3	1396.0	19.0	77.4	5.8	96.4	7.3	1444.0	12.0
17	1373.0	12.0	1396.9	7.5	1.7	1374.0	18.0	80.0	2.4	94.8	1.3	1441.8	9.7
18	1407.0	10.0	1414.3	5.8	0.5	1413.0	18.0	102.7	6.3	132.0	10.0	1425.8	9.2
19	1657.0	23.0	1676.0	11.0	1.1	1714.0	29.0	83.9	6.9	71.3	6.1	1692.0	12.0
20	1681.0	15.0	1683.0	6.8	0.1	1694.0	18.0	229.0	16.0	169.7	9.6	1691.6	7.5
21	1344.0	12.0	1346.5	7.2	0.2	1304.0	19.0	75.0	10.0	75.8	7.4	1353.8	8.9
22	1604.0	12.0	1640.5	9.1	2.3	1702.0	31.0	51.2	1.4	25.0	0.5	1697.0	9.4
23	1415.0	11.0	1423.2	6.6	0.6	1425.0	19.0	231.0	12.0	102.5	4.7	1435.5	6.6

Table DR2 continued

Sample number	206/238 (Ma)	2σ (Ma)	207/235 (Ma)	2σ (Ma)	Disc. (%)	208/232 (Ma)	2σ (Ma)	U (ppm)	2σ (Ma)	Th (ppm)	2σ (Ma)	207/206 (Ma)	2σ (Ma)
24	1075.0	10.0	1086.2	9.6	1.0	1091.0	21.0	35.3	4.7	35.8	4.1	1098.0	17.0
25	1074.0	12.0	1081.9	8.7	0.7	1134.0	17.0	51.3	2.8	56.6	2.4	1108.0	17.0
26	1264.0	10.0	1301.3	7.6	3.0	1300.0	20.0	85.2	1.7	74.3	1.2	1362.0	10.0
27	1347.0	15.0	1384.3	8.4	2.8	1302.0	15.0	147.0	12.0	138.0	12.0	1450.0	7.6
28	1055.0	7.6	1066.3	7.5	1.1	1080.0	15.0	56.3	1.3	64.8	0.7	1093.0	14.0
29	1652.0	13.0	1672.9	7.1	1.3	1687.0	23.0	104.3	9.8	97.1	9.5	1705.7	6.7
30	1343.0	11.0	1351.4	6.3	0.6	1348.0	25.0	73.1	9.4	58.5	7.6	1379.0	12.0

Note: Latitude and longitude of each sample location listed in Appendix A.

*Analyses from grains excluded on the grounds of 206/238 & 207/235 age discordance > 15%.